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NATURE NOTES,

THE SELBORNE SOCIETY'S MAGAZINE

EDITED BY

J. L. OTTER,

AND

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He prayeth best who loveth best
All things both great and small;
For the dear God who loveth us,
He made and loveth all.

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The Selborne Society's Magazine.

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SELBORNIANA.

Sale of Gilbert White's Manuscripts.—The original letters which Gilbert White wrote to Pennant between August 10, 1767, and July 8, 1773, and which form part of the celebrated "Natural History and Antiquities of Selborne," were put up for sale at auction by Messrs. Sotheby, Wilkinson, and Hodge, at the end of November, and were purchased by Mr. Quaritch for £134. The same buyer also secured the unpublished MS. of Gilbert White's "Garden Calendar," dating from 1751 to 1767, for £177. The MSS. had never been out of the possession of the family since White's death.

The Eating of Larks.—Larks are now often in the *ménu*. They make, in truth, a delicate meat, but is it agreeable with Selbornian feeling to eat them? They are being consumed by tens of thousands, and are rapidly diminishing in numbers. That alone should be sufficient to give pause in the destruction of any bird, even one of unmusical note, and dull, low tastes. But a skylark! The blithe spirit which is surrounded, as it were, with a luminous halo of poetry, half religious. Can it be imagined that Wordsworth, after finishing his ode with—

> Type of the wise who soar, but never roam;
> True to the kindred points of heaven and home

could sit down to a dish of larks? Or Shelley? Would the author of

> Teach me half the gladness
> That thy brain must know,
> Such harmonious madness
> From my lips would flow,
> The world should listen then, as I am listening now!

call for lark pudding?

There is no more reason for poets to be squeamish about their victuals than other folk of refinement. Oysters, beefsteaks, geese, and so on are quite fitting as bardic nourishment, at any rate until honey-dew and the milk of Paradise be brought to market; but if Wordsworth or Shelley ate larks, faith receives a shock indeed.

Poets are the exponents and guides of human feeling. If otherwise, they would scarcely be themselves worth preserving. But it is not necessary to go to school to the poets; it is not necessary to reach a high plane of sentiment in order to abjure the lark culinary. The living sky-lark is a joy to all. No heart is so tough as to be insensible to the beauty of its movement and song when seen and heard. Just so. When seen and heard.

But many do not see and hear, and many who do, forget in towns in the dark winter. Not seldom, too, does the festive diner, when confronted by *mauviettes à l'Impératrice* think in this manner: "Well, it is a pity they were killed, but they cannot be restored to life, so I may as well eat them as some one else. Or, as they are *à l'Impératrice*, perhaps better." Cheered by this fallacy he enjoys his two mouthfuls.

A very important point is the small size of the skylark. You kill this life for what? For literally two mouthfuls—stuffing, or other foreign accessory being excluded. If a lark were as big as a duck the case would be different. *Le jeu ne vaut pas la chandelle.* They say that poulterers and cooks can between them turn sparrows into larks. And sparrows—well, there is perhaps an embarrassing wealth of sparrows. Would it be impossible to persuade inveterate lark-eaters to order sparrows, and see that they get them?

The Thames as a Salmon River.—Some interesting letters have been lately printed in the *Times* on the proposal to attempt the restoration of the Thames as a salmon river. The two causes adverse to the life of salmon in the Thames are the obstructions which prevent the passage of the fish, and the pollution of the lower river. The former is the more potent. A certain amount, perhaps a large amount, of pollution salmon can bear when *en route*, but inability to reach the upper waters is necessarily fatal. Mr. Stuart Moore tells us that down to the time of Henry VI. mills were slight structures, and seldom built on the main stream. Fishery weirs and kiddles were structures of wood and wattles, and did not altogether obstruct the passage of the fish. "Later on mills were improved and enlarged and the dams heightened and made stronger, and we find in manorial accounts that a dwindling of the profits of salmon fisheries began in the times of Henry VI. and Edward IV. By the time of Henry VIII. many rivers were almost destroyed as salmon rivers. A remedy for the evil was found in 23 Henry VIII., 1532, in the passing of the 'Bill of Sewers.' The commissioners appointed under that Act ruthlessly swept away the mills,

mill-dams, weirs, and other impediments in nearly every river in the kingdom. Manorial accounts of this period show the bailiff of the manor stating that he does not answer for the rent of the mill or the rent of the fishing weirs, because they have been wholly destroyed by the order of the Commissioners of Sewers, and in a few years there appears upon the accounts an enormous increase in the profit of salmon." The rivers indeed so teemed with salmon that the people of the country side forsook their proper labours for fishing, and came armed so that no one might drive them away. In time, however, new dams, mills, and other impediments were built and the profits of the fisheries decreased.

Under the Thames Navigation Acts of 1788, 1795, and 1812 the progress of the "canalization" of the river was rapid. Locks were built, or new cuts were made, and when a new cut was made the old stream was effectually blocked by a high solid weir which, except in flood times, must have totally stopped the passage of the fish. The take rapidly decreased from 1804, and the last salmon caught was in 1823, near Monkey Island. It would seem then that salmon disappeared from the river long before the period of greatest pollution (the date of which is put at 1850—60). The almost certain cause was obstruction by the new pound locks and weirs. The filthier state of the water later on would, no doubt, have been sufficient to stop the passage of the salmon. Mr. F. Buckland's experiments in restocking the Thames seem to have been immediately checked by pollution. The most deadly ingredient in London water was probably the refuse from gas works. Gas companies now dispose otherwise of their non-commercial products, and the London County Council's efforts to purify the tidal waters of the Thames have had a very sensible result in the reappearance of the smelt at Richmond. The time seems to have arrived when a practical experiment might be made of the present quality of the tidal waters by hatching eggs in the river. Then, if Thames-bred smolt should be seen as grilse leaping at Richmond Lock, one important part of the question would be answered, and immediately means might be sought of opening, or making, the needed passes to the upper waters. The subject was mentioned at the meeting of the London County Council on December 21, and will be considered by the Rivers Committee.

The New Forest.—A Bill affecting the New Forest is now under consideration. It is proposed to empower the Commissioners of Woods and Forests to sell pieces of land in the Forest for various public or semi-public purposes, such as sewage works, recreation grounds, hospitals and schools. No piece of land so sold is to be more than 25 acres in extent, and the whole amount is limited to 500 acres. This may not seem very much out of the 63,000 acres of forest land, but nibbling often creates an appetite, and there are other considerations. No attempt ought to

be lightly made to take away any part of the only extensive stretch of forest land left in England, and naturalists and Selbornians generally may have something to say upon the matter. Up to the present time a private Act of Parliament has been the only instrument of encroaching, and the immediate need, viz., land for a sewage scheme at Lyndhurst, might be met in that way. What do local Selbornians think ?

Churchyard Bottom Wood at Highgate.—The Parks and Open Spaces Committee of the London County Council recommended in their report that a contribution of £2,500 be made by the Council towards the purchase money required. This is a much smaller amount than the promoters and friends of the scheme hoped for; and, if no more be granted, the scheme of purchase will almost certainly fail. At a meeting of the Council held on December 21, Mr. Shaw Lefevre moved as an amendment to the report that the recommendation be referred back to the Committee with instructions to consider whether the proposed contribution should not be increased. The amendment was carried by a large majority. There is consequently firm ground for hope that a grant sufficient for the purpose will now be made. The total amount of contributions is about £23,600, and the balance required £6,400.

The Commons Preservation Society.—We have received the report of the proceedings of this Society during the years 1893 to 1896. The curious deliberation in reporting its proceedings is in remarkable contrast to the alert promptness of the proceedings themselves. The principal work is the examination of bills, both public and private, affecting commons and open spaces, and the opposition offered, both in Parliament and elsewhere, to objectionable proposals contained in such bills. Another important service is that of giving advice to local authorities and private individuals in cases where "the interests of the public are being injuriously affected in respect of commons, open spaces, roadside wastes, and footpaths." The Society claims that it has saved 50,000 acres from enclosure, and obtained regulating schemes for 110,000 acres. Lords of manors hold it in wholesome terror, and even railway companies regard it with deference. *Valeat !*

Late Nesting.—On December 17, while crossing a field some three or four miles from my house, I saw a bird on the ground, which, as it did not fly away at my approach, I at first thought had been injured. On taking it up, however, which I had no difficulty in doing, it proved to be a young thrush, fully fledged but unable to fly. I carried it to the shelter of the hedgeside where it quickly ran off among the long grass. I had read of a thrush's nest being found containing eggs in the adjoining valley (Wharfedale) a week or two ago.

W.

ON MATTERS SELBORNIAN.

THE beginning of a new year being the recognised time for retrospect and prospect, for counting losses and gains, the time for penitence for sins, and for the formation of good resolutions for the future, some review of the position of NATURE NOTES and of the *Selborne Society*, with the insinuation of a moral, may not be amiss.

NATURE NOTES is both titularly, and in fact, "the magazine of the Selborne Society;" not in the narrow sense that its scope is limited to members of that Society, but in the sense that it is an instrument made and directed by the Selborne Society: made and directed, however, for advocating causes which, though peculiarly dear to that Society, are of general concern, and for dealing with subjects of interest to all naturalists, whether members or not.

In the editorial programme put forth eight years ago it was stated:—

"One main object of the magazine is to establish a connecting link between uninstructed love of Nature and accurate scientific knowledge. Those who know most are not always those who love most; but additional knowledge will certainly increase the pleasure of those who are already Nature lovers, *i.e.*, Selbornians. Accordingly, the articles in the magazine will not be of a technically scientific nature, but the writers will seek to combine accuracy of statement with a popular style. Such topics will be chosen as are likely to interest the ordinary reader, who is not a trained botanist or zoologist, but wishes to learn more about the flowers, birds and insects which attract his attention in his daily walks, if he lives in the country, or which have caught his eye in his holiday rambles, if he is one who passes most of his time in 'populous city pent.'

"It is believed that a large number of interesting observations, made by those who use their eyes for the purpose of Nature-study, are lost, because the observers do not think what they have noticed is of sufficient value to be worthy of record in any scientific journal. We may hope that NATURE NOTES will do much to utilise such observations and to collate the experience of various observers."

The Society may without arrogance claim a fair measure of achievement of this part of the programme. The cultivated enthusiasm of Mr. Myles, so generously given to the work of editing NATURE NOTES, was not given in vain; nor since our loss by his death (so untimely as it seems) has the care and accurate knowledge of Mr. Britten been for nought; far from it. But the benefit of such services, however great, is not alone sufficient, in the circumstances of the case, to make the magazine equal to our reasonable hopes. Though it is of small size, the task of editor becomes difficult, or impossible, if he

cannot rely on the free, willing help of others; for this, amongst other reasons, that he has not at his disposal the resources of the purse, and thus lacks one of the usual, surer, and more trustworthy means of obtaining a regular supply of contributions. A late dean of Ely is said to have commenced a sermon in the Cathedral with these words: "It has pleased the Almighty to found human society on two bases—one is money, the other is matri*mony*." But the base is only part of the structure. Above are the polished corners of the temple. And in this country so much gratuitous work is given without stint for all sorts of useful purposes, that a belief that our little, slim periodical should be maintained in vigour on the bounty of the numerous members who are rich in the needed abilities does not seem to savour of rashness. Our past experience indicates the contrary. Many have been the instructive and informing articles which have appeared in NATURE NOTES. But though there is cause for congratulation there is none for complacency. More might be done.

The record of observations in nature, under the title of *Natural History Notes and Queries*, should be an important department of the magazine. Here no scientific or literary quality is necessary in contributors; only the good luck of the opportunity and the trouble of making an accurate note of the circumstances, and sending it.

It is a commercial truism that (*cæteris paribus*, an important qualification) the better the contents of a magazine the larger the circulation; but the converse, in the case of NATURE NOTES, will also be found true—that the larger the circulation the better the contents. There is mutual action and reaction. A small audience discourages a speaker, and it is but reasonable that an invitation for gratuitous original writing should be considered referentially to the probable number of readers. The circulation of NATURE NOTES is substantial, but not very strenuous efforts on the part of members of the Selborne Society would, perhaps, double it. As one result of an increase the intrinsic merit of NATURE NOTES would be improved; as another, the general usefulness of the Society would be advanced.

Within the ring of the Selborne Society are persons of diverse views—not conflicting, but diverse—persons of various modes of thought and feeling. Both the management of the Society's affairs and the conduct of the magazine may, therefore, give occasions for annoyance, fretting, or even offence. The occasions may be just. But let any result follow rather than a freezing of interest in the Society. A man dissatisfied with his entertainment at an inn goes to another; disgusted with the play at a theatre he leaves the house. It is not his business to reform either, and his only concern is to please himself. But within a Society whose members are co-operating for common objects it would be more agreeable with theory if faults acted as incentives to practical efforts to remedy them.

The Society is now fairly well known, and is justifying its existence. Great visible achievements in the attempt to preserve wild life cannot be expected. The Society's mode of influence is quiet, operating through the precept and example of individuals in many places; but the sum of particular results may be large. The instruction of children is obviously of high value, and the Clapton Branch affords to other Branches a model of such work.

The Selbornian proposition, generally, is hardly now a subject of controversy. The opposition is not argumentative, but is in the inert forces of apathy, insensibility, want of imagination. The growth of feeling in favour of preservation has, indeed, grown remarkably in the last fifteen years, and is now so widely diffused that the prospect is encouraging within the possibilities of the case. But the development of industrialism and the growth of population encroach surely year by year on the extent of the possible. The land whose physical conditions allow the existence of wild life is shrinking before an irresistible human expansion. To tilt at brick walls is foolish, if not worse. It wastes time, and breaks the weapons which might be used against proper and vulnerable foes. Nor let us repine. The victories of man are glorious, though, as in all victories, there are losses. Let us be practical. The inevitable sophistication of nature in one place makes the effort to preserve the spirit of nature in another, where it may be effectual, all the more needful. The encouragement of the study of natural history must, under all conditions of life and locality, be of great benefit, and nowhere can it be unsuitable to teach that the dominion of man over nature is not a dominion rightly exercisable in the gratification of caprice, or for selfish greed, but that man should rather be the guardian of, and in a sort the trustee for, his humble fellow-dwellers on the earth.

J. L. Otter.

NOTES ON BUDS.

NTRODUCTION.—From the present time until spring returns, is afforded the opportunity of studying the structure and behaviour of buds when expanding. They are primarily the result of the lowering of temperature in autumn; for as soon as this rises above a certain degree they burst open and begin to grow. But the elements of a bud are not merely or entirely arrested structures, whether temporarily or not, as are the minute leaves within them; for the outer "bud-scales" are special formations protecting the more delicate parts within. Now these scales are not always the same thing, for nature is never at a loss to make any structure, and if it be not convenient to construct it out of one thing

she simply utilises another for the same purpose, as we shall see.

Bud-scales may protect the undeveloped leaves or flowers. I am here only concerned with the former. To find out what a leaf-bud consists of we must collect some examples, and I would suggest the following as illustrating the remarks I am about to make. Horse chestnut, ash, and walnut, these have one kind of bud-scale; elm, lime, and hazel will be good examples of a second kind; the common laurel and rose represent a third sort; while lilac, privet and the way-faring tree (*Viburnum Lantana*) will stand for a fourth.

Of course there are many other kinds of buds, as those borne underground by subterranean stems of various sorts, such as bulbils, corms, &c.; but space will not allow of any further reference to these. My object is to call attention to peculiarities of buds of trees and shrubs, hoping it may lead others to observe some very curious phenomena connected with these for themselves.

Petiolar Bud-Scales.—Selecting a lateral bud of the horse chestnut it will be seen to have overlapping, dark brown, very sticky scales; removing these there will be found a little woolly body in the middle, and on "teazing" it out with needles it will be seen to consist of minute leaves densely clothed in white wool, an excellent protection against injury by low temperatures, as wool is a non-conductor; so that if one be spread out flat it looks just like a miniature woolly glove. Now, what are the leaf-scales? Let us imagine spring has come—and the bud must be re-examined when it does—we shall find that the outermost dark brown resinous scales are being thrown off (the sticky matter was secreted by their surfaces), having now done their duty of protecting the leaves within; but the innermost and greener scales become more elongated and show little stunted rudiments of blades at their tips. Such reveal the fact that the bud-scales are "arrested leaves," but of which the petioles are abnormally flattened, the blades remaining very minute.

As soon as the true leaves can escape the observer must notice how the leaflets at once curve downwards, so as to put their *upper surfaces* in a vertical plane, for this position lessens the chance of injury from radiation, and it is not until they are pretty nearly full-grown that they finally acquire a horizontal position.

Fig. 1 illustrates the former state of the leaves, and, if this be compared with the accompanying figure of a lupin when "asleep" at night (fig. 2), it will be seen that the position of the leaflets is the same, for the object is identical. The lupin, moreover, is an adult leaf, and sleeps periodically, the leaflets falling at eve and rising at dawn.

The walnut has a pinnate leaf like the ash, with four or five pairs of leaflets. As soon as the leaf can escape from the bud the main petiole curves strongly downwards (fig. 3). The leaflets,

as is usual with most plants, as horse-chestnut, rose, laburnum (fig. 8), &c., are "conduplicate," *i.e.*, the two halves of the blade are folded tightly together, like a sheet of note paper. This protects the upper surfaces, while an additional advantage is gained by the blades being placed at first vertically. As the pairs of leaflets are developed they open out and become horizontal, one pair after another, until the whole leaf is mature.

In the ash the dark brown buds consist of petiolar scales, and if examined in spring, they afford an excellent illustration of transitions between petiolar scales and true leaves. Instead of curving downwards on expansion, as in the walnut, the petioles are erect, but this still enables the undeveloped leaves to stand in a vertical plane.

FIG. 1.
Horse Chestnut.

FIG. 2.
Lupinus pilosus.
Leaf, seen laterally, asleep at night-time.
After Darwin.

FIG. 3.
Walnut.

In the winter, however, on dissecting a bud after removing the scales, a pellet of dark brown wool is seen, and on teazing this out, little white leaves will be found on which the wool grows. The hairs are filled with pale brown liquid and granules.

STIPULAR SCALES.—Many plants are provided with a pair of small appendages at the base of the leaf. These are called "stipules," and the leaf is said to be "stipulate." Those hitherto described had none and are, therefore, "ex-stipulate." Now what are "stipules"? They represent a basal pair of leaflets in compound leaves, and detached basal portions of a single leaf; but instead of growing out of the petiole as leaflets, as, indeed, some stipules do, such as those of the rose; (though the stipules having the new function of protecting the bud in the "axil" they do not assume the form of leaflets in the rose) stipules usually arise directly from the stem, *the connection with the petiole of the leaf being concealed within the stem itself.* The rule is that three, five or more "fibro-vascular cords" pass out of the cylinder of wood within the stem and enter the petiole of the leaf. Then, *secondary cords branch off from the two lateral petiolar cords* and enter the stipules. If there be two opposite leaves, then two horizontal cords run round the stem from the one leaf to the other, forming a "stipular fibro-vascular zone." From this arise the cords which enter the stipules. This is well and

easily seen in the galiums, such as "Cleavers." If a thin section be cut out just above and below a node and held up to the light, the true leaves will be detected by having their cords issuing from the stem cylinder; but all the other "leaves," really stipules, are provided for by the "zone" alone.

The lime is a very interesting case. The small brown buds consist of stipular scales with rudimentary conduplicate leaves within them. This should be carefully studied in the spring, and I will here quote what I have elsewhere said about it.* As soon as the bud expands, while the inner stipules develop considerably, those on the upper side are concave and ovoid and cover the upturned edges of the conduplicate leaves, which at once take a position in a vertical plane; the stipules at the sides elongate much more than the former, furnishing some lateral protection to the whole bud, which now curves strongly downwards and somewhat resembles a mussel in shape (fig. 4). As the bud continues to develop, the branch becomes more and more strongly curved downwards, so that the leaves are held vertically (figs. 5 and 6), and as the lower and older ones increase in size, they assume a horizontal position and undertake to protect the

FIG. 4.

FIG. 5.

FIG. 6.

The leaf-bud of the Lime in different Stages of Development.

younger ones, which are concealed beneath them. Thus the protecting care is handed on to each leaf as it arrives at maturity, until the whole series is developed and the branch and leaves become horizontal.†

PETIOLAR-STIPULAR SCALES.— In the case of the rose the stipules are "adnate" or growing out of the petioles of the fully developed leaves, appearing like wings on the sides. Being at first placed face to face they protect the young bud nestling between them; but as winter bud-scales they are very minute, possessing three points at the apex, which reveal their true

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* "On Vernation and the Methods of Development of Foliage as Protective against Radiation."—*Journ. Lin. Soc.*, vol. xxi., p. 624.

† See some beautiful illustrations of the lime, beech, elm, &c, by Sir John Lubbock, in his paper on "Buds and Stipules."—*Journ. Lin. Soc.*, xxxiii., parts 12-15.

nature, for the middle point indicates a totally arrested blade. On dissecting a bud the minute pinnate leaf with conduplicate leaflets can be detected within. As in the case of the walnut, so does the rose curve its half-formed leaf downwards, the several leaflets all being at first packed together side by side, till the time comes to expand them and to assume the horizontal position.

Fig. 7 represents a young shoot of the Portugal laurel. The stipules are still present, but will soon fall off. The whole branch has grown erect, as in the ash; while the blades are seen to be conduplicate, the two halves are, however, represented as just beginning to separate from each other.

Fig. 7.
Portugal Laurel.

Fig. 8.
Laburnum.

Laminar Scales.—For a bud-scale to be constructed out of a metamorphosed blade of a leaf is comparatively rare compared with the previous methods; but such occurs in the lilac, wayfaring tree and conifers, in which the common needle-like leaf is reduced to a subtriangular form in the outer scales.

On dissecting a lilac-bud the scales increase in size from without inwards, being elongated and boat-shaped, with a distinct mid-rib and branching lateral veins, as in a true blade, until one is arrived at having a short, distinct petiole and a "cordate" base, when the true blade is clearly revealed. This bud shows how rash it would be to assume that the outer scales were of the same nature as those of the ash or lime, though they are all apparently precisely alike externally.

Vernation.*—This word is applied by botanists to signify the various ways in which the young leaves are packed up in the bud—on the one hand, how each individual leaf is folded, and on the other, how it lies with reference to the rest. The

* From Latin *ver*, "spring"; vernation may therefore signify "spring quarters."

commonest method in the first case is, as stated, to be conduplicate; and in this kind they may be flat, as in the lime, or crumpled, like a closed fan, as in the currant and beech.

With regard to the ways in which the leaves cover one another, a common method is to have the halves of a blade slightly separated, and so, standing at an angle, they can then fit over the others, either in two ranks, as in grasses, or three ranks, as in sedges. A third common method is to have each scale and leaf rolled round all the interior ones in succession, as in the cherry.

The various differences can be best studied just as the bud begins to expand and its parts to grow, but before they have escaped, and while the relative positions are still maintained.

As one object of the Selborne Society is to encourage young students to make "Nature Notes" for themselves, it is hoped that this short paper may prove suggestive, as it need hardly be said that scarcely any two kinds of plants have buds exactly alike; so that they will furnish plenty of material for those who wish to pursue the subject further.

GEORGE HENSLOW.

NOTES ON LONDON BIRDS IN 1897.

IN winter London birds are apt to mope, and my morning walks through Kensington Gardens and Hyde Park generally result in my seeing very little life. But on some occasions the birds are extremely lively, and these are often the mornings which human beings seem to find the most depressing. The morning of January 1, 1897, was very dull and damp, and yet it was one of those days which appeal mysteriously to birds. Not only were the thrushes singing wildly, but the wood-pigeons were cooing and practising their spring flight, the sparrows flirting, and the ducks on the Serpentine going through the performance of a kind of dance, in which they frequently indulge in early spring, and also occasionally on bright mornings in October. About ten birds generally take part in these performances, of which about three are ducks and the rest drakes. The ducks start the game by racing round and about the drakes with their necks stretched out to their full length just above the surface of the water; then the drakes, as if at a given signal, raise their chests out of the water, uttering at the same time a curious high squeak, after which they begin to race round with the ducks in a way which reminds one of the chain in the last figure of the Lancers.

On January 13 I heard a pied wagtail in Hyde Park, and on the morning of the 18th, when the thermometer stood at about 25° Fahr., a large flock of larks passed over the Serpentine

flying south. About the middle of February a missel-thrush could be heard singing in Hyde Park near the Bayswater Road. During the last week of this month a strong south-westerly wind brought a good many gulls into town; those which visited the Serpentine appeared all to be black-headed gulls; but I also saw the lesser black-backed and common species on the Thames, off Temple Gardens.

When March arrives London winter is nearly at an end, and things generally brighten up a bit. Mr. A. L. Stevenson, in his article in last month's issue of NATURE NOTES, pities us Londoners very much in winter. At no time of year is London as nice as the country, but if I may be allowed to say so, I prefer winter to any other season in the metropolis. In the first place we are comparatively warm here; and then we know that even the country is apt to look gloomy at this season, so that we do not pine for the fields as incessantly as in spring or summer. It is true we have no "trees to be felled and faggots to be tied," nor have we any "sawing and splitting of logs in the woodshed"; but we do not confine ourselves, as Mr. Stevenson supposes, to "theatre-going and concert-hearing," "mere passive enjoyments." For instance, we sometimes dance, and many of us ride bicycles; moreover, we can skate even when the temperature is far above 32° Fahr., and when there is no sign of ice in Mr. Stevenson's country garden; added to which we have our Zoological Gardens and Natural History Museum, and our Botanic Gardens in Regent's Park and at Kew; so we manage to get through the short days pretty well. When March has come we know that the summer birds will soon commence to arrive. On the 25th (Lady Day) I heard the chiff-chaff within a few yards of the spot where I have heard it in previous years. On April 2 a dabchick made its appearance on the Serpentine and was diving close to the bridge. This was a very interesting day for me, for I later on discovered a crow sitting on a nest in a most remarkable and exposed situation, which I need not reveal for reasons obvious to those who happened to read my "Notes on London Birds for 1895," published in this Journal. A few days later I found another crow's nest, on which the old bird was sitting, so it is to be hoped that this persecuted species may remain with us some years longer.

A wood-pigeon built a nest in a hawthorn in Lincoln's Inn Fields, and commenced sitting on April 8. The nest was in a very exposed position, with people passing close under it all day long, but the bird continued to sit for about a fortnight, and then deserted the nest.

On April 9 I went out for a ride before breakfast on my bicycle and heard a wryneck while crossing Barnes Common, over which larks were singing gloriously. While returning across Hyde Park, after my day's work was over, on the evening of the 14th, I saw four or five wheatears, the first I had observed

there for some years, although at one time I used to see them regularly every spring.

I saw my first London swallow on April 15. On the 20th my sister heard the willow wren in Kensington Gardens, and there were quite a number of them singing on the morning of the 21st. Another dabchick visited the Serpentine on April 24, but did not stay long; this was the day on which I had seen the first brood of young ducks in 1896, this year I did not see them till the 25th—a day later.

During the last week of April nightingales seem to have passed through London. At about half past two on the afternoon of April 27, I received a note from my friend, Mr. George Henderson, written from his chambers in Old Square, Lincoln's Inn. I don't think I have ever been more surprised than I was at the contents of that note; on opening it I read—"A nightingale is now singing in the small garden at the south side of this room." No time was lost in getting to that garden, but the bird had become silent, and all search for it was fruitless. The garden in question is very small, near to Chancery Lane, and with high houses close to it on three sides, on the fourth side there is a low building between it and New Square, Lincoln's Inn—a most extraordinary place for a nightingale to select in which to pour forth his soul. Mr. Henderson is an observer of birds, and there can be no doubt of the accuracy of his identification; moreover, the bird was both seen and heard by other persons, and its presence created quite a sensation in the neighbourhood.

A correspondent of the *St. James's Gazette* on April 28, who signed himself "J. F. C.," stated that he had heard a nightingale singing in Kensal Green Cemetery on the 26th. Mr. F. W. Ashley, F.Z.S., also informs me that the nightingale was to be seen in the Garden of Devonshire House, Piccadilly, on April 22 and 23.

On April 24 Mr. Ashley tells me he saw a pair of whinchats in Green Park. On May 2 my sister saw a cuckoo in Kensington Gardens, and on the 10th I heard two more summer birds, the garden warbler and the reed warbler; the latter was singing near the Row in a lilac, a shrub to which this species is very partial.

The spotted flycatcher was to be seen in Hyde Park on May 18, on which day I also heard the lesser whitethroat.

In his "Memories of the Months," Sir Herbert Maxwell refers to the wonderful change which comes over the mallard after the nesting season. As is well known, when the duties of this season are over the drakes of most species lose their beautiful plumage and acquire a plumage more or less resembling that of the duck. They remain in "eclipse," as this state has been termed, till the autumn moult restores their beauty to them. Sir Herbert observes that this change of plumage has been overlooked by many persons, "which is the more remarkable

because the domestic duck, undoubtedly descended from the mallard, undergoes no such seasonal change." I should much like to learn the experience of others with regard to this adoption of ducks' plumage by domestic drakes. I expect it varies directly with the amount of freedom which the birds are allowed. The birds which are to be seen on the Serpentine have almost the same amount of freedom as wild birds; they can fly wherever they wish. In a great majority of cases the drakes go into a more or less complete "eclipse" in July. The bright green feathers of the head are the first to disappear, then brown feathers appear on the back and flanks, and then the curly tail feathers are lost. The full characteristic plumage is not assumed again till October.

Early in July some friends, who live on Campden Hill, told me they had recently been hearing an owl at night, and from the description which they gave of the cry there could be little doubt that it was a brown owl. From various sources I heard similar reports, and on the evening of July 11, while sitting on my balcony, I saw an owl fly down Gloucester Terrace. A cousin who was with me at the time also saw the bird, which was very likely the one which had been heard hooting on Campden Hill. I saw an owl again on the morning of October 15 near the Serpentine.

Mr. Ashley informs me that on August 14 he noticed a goldfinch in Temple Gardens. I observed two grey wagtails by the Serpentine on October 5, and another on the 15th. This species is by no means uncommon in autumn on the Regent's Park canal, but is rare in Hyde Park.

On October 27 the thrushes struck up, and have been singing more or less regularly ever since. On November 8 I saw a wren in Kensington Gardens, a bird which we do not often see in London now. The stormy weather at the beginning of December brought a good many seagulls to town of the usual species.

My only other observation for 1897 worthy of mention, is that the colony of jackdaws which inhabits the trees in the corner of Kensington Gardens, near Kensington High Street, appears just now to be in a particularly flourishing condition.

A. Holte Macpherson.

Cuckoos Singing at Night (p. 234).—It is not at all unusual to hear cuckoos singing at night, especially when the moon is near the full in summer. There is at times quite a chorus of night-singing birds, nightingales, sedge-warblers, hedge-sparrows, corncrakes, if we can call their notes a song, and the cuckoos. And before daybreak swallows and skylarks join in, followed by robins, thrushes, and others in rotation.

Astwood Bank, Redditch. J. Hiam.

NATURAL HISTORY NOTES AND QUERIES.

Solitary Wasps (p. 255).—I have seen many nests of solitary wasps, but those that I have noticed have all been built *externally*, on walls, &c. I look upon these insects as marvellous in their instinct and ingenuity in building operations.

Last summer, when some iron hurdles were being removed for rick-building purposes, I noticed what at first sight appeared to be a plaster of clay thrown against the "head," or part into which the bars are inserted, but on closer examination I could see it was one of these nests. The hurdle was placed inside a shed for protection of the nest, and also for future observations. Some weeks ago I saw a blue-tit fly out several times, and on examination I found his keen eye had detected the nest, which nine hundred and ninety-nine out of a thousand human beings would not have noticed, and had opened the cells and taken out the larvæ, disclosing about fifteen cells underneath the clod of clay, or rather, the mud-built nest.

Astwood Bank, Redditch. J. Hiam.

Hornets Gnawing Twigs, &c.—This morning (October 4, 1897) I observed a hornet sitting on the stem of a small ash-bush. Upon looking more closely I saw that she was busily stripping off the bark with her mandibles, and when she flew away there was a fair-sized surface freshly bared. This, however, was but part of a large, irregular scar which must have been made in the same way, since the edges of the gnawed bark presented everywhere the same appearance, that is to say, rough, with slender white fibres hanging like threads. On measuring the length of the scar, which in one place extended right round the stem, I found it to be just over $2\frac{3}{4}$ inches.

Next day I paid two visits to the ash-bush and each time found either the same or another hornet nibbling at the latest gnawed edge of the scar. I watched her the first time for nearly half-an-hour before she flew away. She laboured much, as could be seen from the attitudes she assumed. Bringing my face quite close I could distinctly hear the little click made by the powerful mandibles as they met together in the process of shredding the bark. When the rough work was done, however, these were no longer employed, but with the rest of the wonderful apparatus forming the mouth, she went through the process of licking, sucking, and absorbing into her system the juices exuding from the bruised bark. Whilst thus engaged she would allow no intruder on her feeding-ground. Once a fly and twice some small hymenopterous insect came near her, and each time she made an angry run at them, as a dog might have done, snapping with her mandibles.

During the rest of the month I continued to visit the place every few days, finding sometimes one and sometimes two hornets feeding there—never more. On the 31st two hornets remained all night on the stem, where I found them next morning numbed and motionless, their antennæ sunk on their fore-feet and covered all over with dew-drops. They were not then at the scar, but later they crawled down to it as if to feed, but seemed unable to though the sun was now warm. On November 3 one of these two was still clinging amidst some withered leaves close by, and seemed near her end. I took her home and placed her under a bell-glass in my study (no fire), where she remained during the morning, and in the afternoon I brought her into the dining-room where there was a good fire and the temperature high. Here she became quite revivified, ate greedily of some honey which I set before her, and afterwards cleaned herself with great thoroughness. She then buzzed up the sides of the bell-glass and was generally lively and active till I put her in my study again for the night. And yet something of decrepitude seemed to mingle with all this activity. Next day, finding her crawling painfully about smeared all over with honey, I washed her, cleaned her cage, and brought her into the warm dining-room again. The heat again affected her, and she seemed to struggle to live, sprawling out with her legs, raising herself, straining convulsively, and then tumbling over on her back. I gave her a little honey on the point of my forceps, which she tried to eat, and did, I think, swallow a little of it. Then several times she stretched open her

mandibles to their fullest extent and remained with them thus for some time as if gasping. Soon all this ceased and she lay dead, though slight muscular movements continued for some while. The date of Nock was out evidently, for she had survived the early frosts of October. The weather latterly had been unusually mild, and it was not the cold but November 4 which killed her.

The following are the measurements of the scar on the ash-twig, which I cut off and still have:—Extreme length, 3½ inches; average breadth, 1 inch (about); circumference at part where the bark is stripped off all round, 1¾ inches.

Wamil Hall, Mildenhall, Suffolk. EDMUND SELOUS.

Notes from Northern Tasmania.—*November* 3.—A little bit of love-making on the part of some large ants called "blue-jumpers" was lately observed. These ants are of a dark blue colour with yellow legs and antennæ, and build small hillocks of bits of stick and gravel, dragging quite surprising weights in comparison with their own. In these hillocks are their nests, and on the outside sentinels are always promenading to give notice of the approach of an intruder. Woe to the unfortunate wight who steps unwittingly too near these redoubtable warriors, for in a second or two they have leapt upon him, and hanging tightly by their mandibles wherever they can find a soft place, sting again and again with the point of the abdomen until their victim is nearly maddened with pain. They are absolutely fearless, and always act on the offensive if man or beast approach too near their habitation. With regard to the *amours* of this species, on the occasion referred to a female, of a somewhat broad flat shape, and wingless, was seen upon the ground, with a winged male dancing attendance upon her. Having captured the latter I allowed the female to crawl away a good distance round a sandy hillock, and then liberated the winged one, which immediately alighted upon the ground and began to track the other, apparently by scent, and without looking where it was going, until it ran into a tuft of grass, on the other side of which the female had stopped. The winged one rushed round this obstacle with all a lover's impetuosity, and encountering the object of his affection, began at once a furious courtship.

November 6.—A very curious larva was found upon a gum-sapling, having a most heavy, ungainly appearance, and proving to be that of a species of lace wing fly (*Chrysapa*). This larva carried a load of material upon its back, the pile being composed apparently of fragments of charred wood and pieces of withered wattle-flowers. This load swayed from side to side as the creature walked, and looked like a waggon load of hay being carted on a rough road. The bearer did not seem to feel any inconvenience from the presence of all this foreign material, even when walking upside down, and had probably placed it there as a protection against its enemies. The shape of this larva was flattish, broad in the middle and tapering off at each extremity, in colour whitish with two dark stripes along the back; it was provided with six legs, two large pincer-like mandibles, and an appendage at the tail with perhaps a sucker action, which seemed to help it to cling, and gave it an impetus when walking. Many brown long-snouted curculio beetles may be seen sitting astride the edges of the gum leaves and feeding upon them. The elytra are covered with small lumps, and there are two longer protuberances towards the extremity. If this beetle be approached by the hand it instantly drops to the ground and lies motionless for a time, but if this manœuvre has not been executed in time and the insect is caught, it will then cling with extraordinary tenacity to its leaf edge, and can hardly be detached without injury.

The young eucalypts are also much frequented by the insects called "frog-hoppers," allied to the English "cuckoo spits," but devoid of the frothy substance in which the latter envelopes itself. The perfect forms of some of these hoppers are very pretty, the head and outer wings being of a polished blue tint, while in others the bodies are red and the wings variegated. They make great leaps with a clicking noise.

November 7.—Many instances of protective colouring may be met with in the bush by an attentive observer; one of the very commonest is that of a little black spider which hunts upon the bark of the gum trees which have been burnt black in the bush fires, and could not be distinguished at all on its hunting ground were it not for the silvery-white palpi, which are constantly in motion.

On the underside of a leaning charred trunk was found a patch of small white eggs affixed to the ends of long hair-like stalks, perhaps the eggs of that same species of chrysopa or lace wing of which the grotesque larva was recently described. Many creatures in the bush of widely different structure and habits are attacked by a small red *acarus* or mite, which goes everywhere with its host and does not seem to cause inconvenience. Thus our common brown lizard which is seen so often sunning itself upon logs and tree trunks, very frequently carries a mite at the joint of each fore leg with the body, and the small scorpions which are frequent under decaying wood are often adorned with a whole galaxy of these little red acari. Several beetles are also subject to their attentions, including the reddish-brown curculios which sit astride the edges of gum leaves; and to-day a tiny black ichneumon fly, only one-eighth of an inch in length, was seen on the sunny side of a young eucalyptus tree with one of these red mites clinging to it.

November 12.—A nest of the "superb warbler" (*Malurus Gouldi*), or as we generally call it the "long-tailed wren," was discovered on the ground among dead bracken, and so artfully concealed that had the hen bird not been frightened at my passing so close and flown out just in front of me, I should never have seen her nursery. This nest was woven chiefly of dry grasses, and was very large compared with the architects, and of a somewhat oval shape, with the entrance near the end. It contained three tiny pinkish-white eggs, dotted with red at the larger end.

November 15.—A nest of the "bush tit" (*Sericornis humilis*), or as we sometimes style it the "short-tailed wren," was found in a large tussock, fixed to several of the long blades. This nest, like that of malurus, is very bulky for so tiny a builder, the bird being even smaller than the "long-tailed wren." The structure is of dry grass and bits of fern woven together, with an opening in the side about large enough to admit one's finger, and running horizontally for a little, then straight down. Three tiny nestlings lay in warmth and comfort at the bottom of this snug domicile.

November 16.—In a bush-garden about half a mile away, one of the spiny lizards rejoicing in the appellation "blood-sucker," but called by scientists "Amphibolurus muricatus," was observed to scratch a hole in the loose brown soil, deposit therein four leathery eggs, then fill up the hole again and depart, leaving the eggs to be hatched by the heat of the sun.

H. Stuart Dove.

The Union of the Seasons in North Devon.—As indicated by wild plants, the four seasons of the year are now in union in the country around Barnstaple. The following representative flowers, picked on the 13th and 14th inst. (with the exception of the first mentioned, which was gathered on the 8th), are now in my room:—*Petasites fragrans*, *Vinca minor*, *Mercurialis perennis*, *Ranunculus ficaria*, *Primula vulgaris*, *Viola odorata* (white), *Veronica chamædrys*, *Geranium columbinum*, *Geum urbanum*, *Brachypodium sylvaticum* (variety *pubescens*), *Lonicera periclymenum* (young whorl, somewhat damaged by gale and rain, but still fairly good), *Stachys betonica*, *Picris echioides*, *Inula conyza*, and *Hedera helix*.

Edward G. Aldridge, F.G.S., F.R.Met. Soc.

December 15, 1897.

P.S.—*Caltha Palustris* was seen on October 4, and *Potentilla reptans* on December 6.

REPORT OF THE FIELD CLUB FOR THE YEAR 1897.

DURING the past season twenty-three rambles have been undertaken by the Field Club, and the average attendance shows the interest in these walks to be well maintained, if not on the increase. The districts visited were much the same as in previous years, with perhaps only one notable exception. This was a visit to a Bee Farm in Kent, which had been kindly arranged by Mr. Brice, the Hon. Secretary of the Kent and Sussex Beekeepers' Association, and which promised to be of exceptional interest. The day, unfortunately, turned out very wet, and only two persons essayed the walk. We hope, however, that Mr. Brice will see his way to give up a Saturday next season to conduct this ramble for us.

A number of members of the Ealing Natural Science Society joined, by invitation, a ramble from Hanwell to Northolt on May 10. This walk was most happily arranged, there being less than one hundred yards of walking on the roads in the whole distance of six miles. On this occasion advantage was taken of an almost disused footpath across a hay field. This alone would have fully justified the walk, for only by preventing our public footpaths from falling into disuse can we hope to keep them from the grasp of landlords, too often ready to help the decay of rights of way. On June 19, the few persons whose heads were not so much turned by the excitement of the Jubilee as to render such an undertaking dangerous, walked along the banks of the Lea from Rye House to Ware This, though one of the most distant places visited, is always a favourite walk.

On July 17 the valuable brasses in Stoke D'Abernon Church were inspected and admired, and the old Manor House was viewed with interest; and on the 24th a walk in conjunction with the Lambeth Field Club was taken, the chief feature of which was a most delightful ramble through the splendid oaks of Ashstead Woods. The Nether Hall ruins near Rye House were visited on August 28, and a carefully compiled and deeply interesting paper on the subject was read by Mr. Gerish. This splendid example of Tudor architecture, had it been allowed to decay in the ordinary course of nature, would have been far more complete than is at present the case. A large part was pulled down, and this work of destruction was discontinued only on account of the labour and expense necessary to demolish so well-built a structure. In a walk such as that undertaken on September 4, from Ham Farm to East Croydon, it is difficult to realise that smoky London is but a few miles distant. The pine woods, the bracken breast high and the heather in full bloom forming a purple carpet beneath one's feet constituted a sight not to be easily excelled and not to be forgotten. Those who did not take part in this ramble missed a very great treat indeed.

A full account of each of the season's rambles, interesting though it would no doubt be, is impossible in the small space at our disposal. No notes are given of the fauna and flora seen on these occasions, as it is considered by some, and with no little reason, that the publication of such information would only be an invitation to the collector to make raids on those rarities which it is one of the chief objects of the Society to preserve.

It is much to be hoped that next season will see more members willing to undertake the conduct of these rambles. Some of our guides have arranged and personally conducted as many as one a month throughout the season, and they would no doubt be glad to receive some help. New guides would also mean fresh routes, a great desideratum if the present interest in the Club is to be maintained. We have already the promise of a long day's excursion to Burnham Beeches, and trust that many will be able to avail themselves of this opportunity of visiting one of the most lovely spots within easy distance of London.

In conclusion, a reminder as to the utility of these walks will not be out of place. Gilbert White was essentially an outdoor naturalist; his book is almost entirely a record of observations made in the open air, and if we wish to follow up his work and investigations we have in these rambles a ready means for the gratification of that desire.

ERNEST A. NASH,
Hon. Sec. Field Club.

TO CORRESPONDENTS.

A. W. Hudson.—"Street" as a place-name, or component of one, almost surely indicates the site of a Roman road. Street is from *strata* (*strata via*) a paved road. The Saxons did not make such roads, and borrowed the Latin name. "Cold Harbours" generally occur on Roman roads, but the name is not a corruption of any Latin words. "Cold Harbours" were probably deserted villas, or other buildings used as shelters by travellers in the absence of inns. Compare the "Kalle-herbergs" of Germany.

SELBORNE SOCIETY NOTICES.

Donations towards the Reduction of the Deficit.—The following donations have been received, and are hereby acknowledged with thanks:—G. F. Rowe, Esq., 18s. 6d.; C. Leeson Prince, Esq., 10s. 6d.; G. A. Musgrave, Esq., F.Z.S., F.R.G.S., 10s. 6d.; Mrs. G. A. Musgrave, 10s. 6d.; Mrs. Lomer, 10s.; C. W. Ware, Esq., 10s.; Rev. H. E. U. Bull, M.A., 5s.; Miss Lomer, 5s.; A. E. Malaher, Esq., 5s.

Donation towards Leaflet Fund.—A further donation of £1 10s. has been received from the Rev. H. E. Luxmore, of Eton, in order that a reprint may be made of Mrs. Litchfield's leaflet on "The Cruelty of Wearing Ospreys."

Council and Committee Meetings.—The next meetings of the Council will be held on Tuesdays, January 4 and February 1 at 5.30, and of the Magazine and Leaflet Committee on January 18 and February 15 at 5.30.

NEWS FROM THE BRANCHES.

Bath.—In connection with the winter series of meetings of this Branch a lecture was delivered on December 6 by Mr. E. A. Martin, F.G.S., on "Nature at the Seaside." There was a good muster of members and others present. The chair was taken by Mr. Scott, and the lecture was illustrated by an excellent series of lantern slides, under the manipulation of Mr. E. J. Appleby. The slides were prepared from photographs by Mr. J. Hornell, of the Jersey Biological Laboratory.

Clapton.—At the monthly social meeting held on December 4, Mr. C. Nicholson, F.E.S., gave a very instructive lecture on "The Microscope," followed by microscopical exhibits by Messrs. Ferdinand Coles and Jas. D. Hardy, F.G.S. Other members and friends contributed vocal and instrumental music during the evening.

Croydon and Norwood.—On December 4 a lecture was delivered by Mr. F. P. Perks at the Thornton Heath Baths, on "Our Winter Constellations." The lecture was illustrated by lantern slides.

RULES FOR CONTRIBUTORS AND CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of unaccepted contributions cannot be guaranteed. We cannot undertake to name specimens privately, or to return them.

3. Communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES should be addressed to the Editor of NATURE NOTES, 16, Vernon Terrace, Brighton, as should specimens for naming, books for review, &c. The Editor cannot undertake to reply privately to questions.

5. Letters connected with the Selborne Society, as well as all inquiries as to the supply of NATURE NOTES, and subscriptions, should be addressed to the Secretary of the Selborne Society, A. J. WESTERN, Esq., 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

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SELBORNIANA.

Wolmer Forest. — The proposal that Wolmer Forest should be made a sanctuary for wild animals is captivating, and many men of light and leading, including Mr. Gladstone and Mr. Watts the painter, are amongst its supporters. The history of the matter up to the present time is as follows:—A memorial, signed by members of the Guildford Natural History Society, the Mayor of Guildford, and others, was addressed to the Commissioners of Woods and Forests, requesting that Wolmer Forest "be reserved as a sanctuary for wild birds and other creatures throughout the year; that it may not be let for game preserving nor for any purpose inimical to bird-life; that it may not be lawful at any time to kill or disturb wild birds in it, nor to take or destroy their nests or eggs; that naturalists may have access to all parts of the forest for the purpose of study; and that the forest may remain in its present condition in perpetuity as a national memorial to England's greatest out-door naturalist, Gilbert White of Selborne." In reply the memorialists were informed that the forest is in lease to the War Office until 1910, and that the memorial would be forwarded to the Secretary of State for War. The opinion of Mr. Stafford Howard, one of the Commissioners, was also given "that where game preservation is carried out only those creatures which are specially destructive of birds are kept down, and animal life generally flourishes better than it would be likely to do under other circumstances." Mr. Howard also does not see "If game preserving were done away with in Wolmer, and it were made a penal offence to molest birds, &c., who is to enforce the law, as there would in that event be no game-keepers." There is good sense in this. In an open, uncultivated, easily accessible tract such as Wolmer, the most strict

prohibitive laws would be useless unless there were persons on the spot interested in enforcing them. The Crown would probably not be concerned even to check trespassers. A communication from the War Office has not yet been received, but has been promised. Mr. Thomas Whitburn, the promoter of the scheme, has been good enough to say that he will send particulars when the decision reaches him. Miss Edith Temple, who has given us information on the subject, does not regard the Queen's soldiers as dangerous. She thinks that the military manœuvres are harmless, but has a different opinion about the practices of the lessees of the sporting rights.

The Thames as a Salmon River.—We have received from Mr. George Rooper, of Nascott House, Watford, the following letter on this subject:—"The two causes to which you attribute the absence of salmon in the Thames—obstruction and pollution—are doubtless potent factors, but a far more fatal obstacle exists in the presence of the ravenous pike, which abound in every pool, from the source to Richmond. Assuming the spawn deposited and the parr hatched, the smolts must remain in the weir for a year before, putting on their silvery coats, they depart for the sea. What chance would they have of escaping the myriads of pike, hungry and expectant, that occupy the whole water through which they must pass? None at all! not one smolt in ten thousand would ever reach the sea, and, if any did, could never return to replenish the water. The fact is that the Thames never was a 'Salmon River,' properly so called. The records even of the old time, when pike lately introduced were very scarce, are miserably poor—sixty or eighty are recorded as taken in a year, less than a fifth of the number taken in an ordinary haul. The reason is obvious. There are no spawning beds in the upper waters of the Thames, and salmon invariably seek these upper waters to spawn in. There are some fine gravel beds about Shepperton, but I know of none higher up, and above Oxford all is clay. My dear old friend, Frank Buckland, was wild to make a 'Salmon River' of the Thames, and for many years sacrificed five or six thousand parr in the laudable but fruitless attempt." The Thames may not be naturally an ideal salmon river, but the small takes referred to by Mr. Rooper were in comparatively recent times. Earlier notices indicate a good supply.

The New Forest.—It is believed that the proposed New Forest Bill has been dropped. It must be stated that some local Selbornians of credit did not regard the bill with anxiety, nor expect, as a likely consequence of its enactment, damage to the natural beauties or interference with the wild life of the forest. There may, no doubt, be places within the whole property of the Crown known as the New Forest, where public

undertakings might be harmlessly established, but the precedent seems dangerous. We have the satisfactory assurance that Selbornians of the neighbourhood keep a watchful eye over its purities.

"Hospitals, schools, and sewage farms," are words of fear in connection with beautiful wild country. It cannot be expected that the Genius of the Forest would brood over such institutions.

THE TRADE IN BIRDS' FEATHERS.—Until lately it has been supposed that the trade in egret plumes was declining; and, indeed, the trade in "decorative" feathers generally. Woman, "who has power on her head because of the angels," took to wearing flowers, or even gardens, in her hat. That fashion has now grown tiresome, and there is a reversion to the old odious practice. Readers of NATURE NOTES are, doubtless, acquainted with Mr. W. H. Hudson's letter in *The Times* of Christmas Day. It would seem that the quantities of skins and feathers sold at the Commercial Sale rooms on December 14, can only be expressed in terms of acres. *The Times*, in a very searching leading article on the subject, sounded a note almost of despair. But it is probable that the ignorance of the slaughter and cruelty involved in wearing "ospreys" is under-estimated, and that much of the preaching of the last fifteen years has been to the converted. The sources and origin of changes in fashion are obscure. Leading milliners may, very often, start a movement. They often assert that so and so *will* be the fashion next season; that is they will make it so, if they can. Rapid changes are good for their trade. It is astonishing how comparatively durable are articles of apparel less subject to alteration in style than hats and bonnets. It is not a hopeful task to tackle shopkeepers, but it is plain sense that their plans may be easily defeated by their customers if they choose. There is not even the pitiful excuse that "ospreys" are the "only wear," as crinolines once were. There is no such exaction on the part of Fashion, and it is within experience that women may be even "smart" without desolating the homes of the white egret.

A Carnivorous Mollusc.—Referring to the interesting notes on the occurrence of Testacella haliotidea in the November and December numbers of NATURE NOTES, this mollusc was reported to a meeting of the North Staffordshire Field Club in November last as having been found (as it is believed) for the first time in Staffordshire in October last. A most interesting discussion followed, as to whether this "snail-slug," as it is called, is indigenous or introduced into England, and also as to its range, and how far its range is affected by geological formation. If any of our readers can give me any information of a prior discovery of this mollusc in Staffordshire, or as to the range of any of the three British species of Testacella in the British Isles, I shall be much obliged.

Rosehill, Cheadle, Staffordshire. JOHN R. B. MASEFIELD.

MY SANCTUARY.

IT is a very sad thing to learn from what Mr. Joseph Nunn states in the *Transactions of the Hertfordshire Natural History Society*, that birds are becoming rarer in my part of England. My hope and my impression had been that the main cause of this was the inevitable advance of bricks and mortar destroying the haunts and feeding-places of the songsters; but Mr. Nunn has a sadder tale to tell. If he is right, it is not only the spread of suburban London, but the stupidity of the gamekeeper and gunner, which is having this deplorable result. Rare birds, I am afraid, are becoming every year more rare, because of the persistence with which they are shot as soon as ever they are observed.

It is difficult to see how the evil is to be remedied unless landowners can be induced to make their estates, in some measure at least, sanctuaries for scarce and interesting birds which, as things are now, seem on the point of being exterminated. For the last five-and-twenty years there has been no shooting on this place, other than for keeping down rabbits.

Although it is of small extent, only comprising a hundred and seventy acres, and situated within eleven miles of London, these fields and woods are fully tenanted by several kinds of owls and hawks, the green, and greater spotted woodpeckers, nightjars, lapwings, and a great variety of the smaller species of birds. Nuthatches abound; we have five species of titmice, gold crests, blackcaps, tree-creepers, and nightingales. The woodcock is sometimes seen in the spinney, and snipe, both in the running water of the park and along the edge of the wheat-fields. There is no lack of warblers and finches to make the woods vocal in spring and summer. This, I think, may be considered a highly satisfactory result of protective care. On a fairly-sized sheet of water we see hundreds of mallards, and an occasional heron visits us from a neighbouring reservoir.

When the cold weather sets in the place is visited by wigeon, teal, and the lesser grebe; moor-hens and coots are always flitting about in the rushes and flags, and rear as many young birds as may happen to escape the jaws of the large pike, the only permitted poachers which exist at the lake.

This winter I have met with two curious instances of albinism and melanism. A snow-white and jet-black mallard may be seen in the lake swimming about with the other ducks, and when the flock rise up for a flight, the black mallard generally precedes the rest, and seems elected to be their leader. There are, also, in the garden two parti-coloured blackbirds, one almost white, and the other rendered conspicuous by his black and white plumage.

I should rejoice to hear that such protection as I give to the feathered creation were more widely extended to our rare birds, and that the owls and the kestrels, being essentially mousers,

might be wholly spared by the gamekeeper's gun. It needs only an examination of the pellets of these birds to be assured of the immense quantity of mice, moles, and rats that are caught by them. Sparing owls and kestrels from destruction is no more than bare common sense from every practical point of view.

Watching various kinds of wild creatures is a continual pleasure to me, and affords much additional interest to my daily walks.

Even when I am sitting indoors, eight or ten squirrels are generally to be seen playing outside the window, and it is their habit to come boldly into the room in search of nuts which are freely provided for them. A gentle hen pheasant has become so tame as almost to be persuaded to eat out of my hand; and when the nuthatches have taken their share of Barcelonas, and other birds have satisfied their appetites with soaked bread, fat, canary seed, and other dainties, I often see a hedgehog steal up to the window, in broad daylight, to enjoy his humble repast.

I am accustomed to living in happy accord with all living things, but my visitors often look on with amazement at the tameness of "Wild Nature."

It needs but the absence of guns, dogs and cats, and the provision of suitable food for the creatures we desire to attract, for the same results to be attained, to some extent, in any quiet country garden. I can but hope some readers may be induced to try to thus win the confidence of wild creatures, and experience for themselves the pleasure that may be enjoyed in their company and friendship.

Great Stanmore. ELIZA BRIGHTWEN.

A SHORT MONOGRAPH OF PLOCEUS BAYA, ONE OF THE WEAVER BIRDS.

PERHAPS there is no more interesting a group of little birds than the weavers, not so much on account of their plumage—which, however, in some of the species is very brilliant—as on account of the singularly skilful manner in which they construct their nests. There are, I gather, between 200 and 300 species of them, and they are invariably to be found in the warm regions of the earth. They have selected as their home the mild tracts of Africa, Australia, Abyssinia, India, Ceylon and the Eastern Archipelago, and have come to be classed by ornithologists as in the "Oriental region."

They are allied to our finches, and some species were formerly included in the genus *Fringilla*. Cuvier brought together the variously distributed forms into a genus named by him Ploceus, from the Greek "pleko," weave. Cabanis formed the family Ploceidæ. By the French they are known as

"les tisserins," from the word "tisser," to weave. In many parts of India they are all generally speaking called "bayas" from an old Sanscrit word, but in the Lahore district they are better known as the Bijira bird. In Malaya they are mostly called the "burong peepit" or "bird sparrow," in some districts of that peninsula the "burong blût" or bird weaver, and their nests are called by the general term of "sarong burong." Sometimes the bird has been miscalled the tampûa, which is the Malay term for the tailor bird, a totally different species, and belonging to the *Sylviaceæ*, and he is a "tailor" and not a "weaver," and makes his nest by stitching one or two leaves together, using his bill as a needle, and some vegetable fibres in the way of a thread, and so forming a warm and comfortable hollow in which to rear his young.

Most of the weavers build pensile nests, varying in form, arrangement and position, according to the habits of the different species, but all construct their tenements from the stalks and stems of the natural grasses in these warm tracts, and which they select while yet green and fresh, so that they may be more elastic and flexible, and thus more suited for the weaving process which their little bills and claws have to perform. Perhaps the most remarkable nest of the tribe is that built by the sociable or republican weaver bird of South Africa, which consists of a vast collection of these grass nests, all similar in construction, and united together under one common roof, so as to appear at some little distance not unlike the thatch of a native hut, and they are generally built round a smooth-stemmed tree as a sort of protection from climbing animals.

I need scarcely refer in greater detail to the nests of others of the genus, for a very good account may be obtained from the "Royal Natural History," recently edited by Richard Lydekker, and published by Warne & Co. Of well-known species we have the "Phillippine weaver," the "Madagascar weaver," or "nelicourvi" from the Tamil language; the "Abyssinian weaver": the red-billed, olive, white-headed and masked weavers; and allied to them under the same family of the *Ploceidæ* are the "whydahs," or "veuves" of the French (literally widows); the "munias," to which the Java sparrow belongs; the "amadavats" (*Estrelda amandava*), which are well known in India, where the male is called the "lâll" or "red" bird, and the female the "muniah," an Arabic term from which doubtless we get our word for one section of the group.

The original home of the little baya I am about to describe was, I take it, in the Dûns or Dhônes of India, south of the Siwalik Hills, where it is still very common, and doubtless becoming too numerous there it migrated, according to the law of dispersal under pressure of want, to other localities where it could find a suitable clime in which to rear its young, and at the same time procure the seeds of various natural grasses which form its staple food. Accordingly we find it passing

in a southerly direction through Central India, and as far as Ceylon, and again through Assam and Burmah to the Eastern Archipelago.

I have often seen this identical baya in the Malayan Peninsula, where I resided for many years, and I now write of it of course from memory; but through the kindness of friends in India and Malaya, I have recently received full-sized specimens of both male and female bird, together with various nests from both places, and a sample of the eggs.

The dimensions of these birds are as follows :—

Male Bird.		Female Bird.	
Length	5½ inches.	Length	5 inches.
Wing	2⅝ ,,	Wing	2¼ ,,
Bill	¾ ,,	Bill	¾ ,,
Tail	2¼ ,,	Tail	2 ,,
Tarsus or leg ...	1¼ ,,	Tarsus or leg ...	1¼ ,,

The bills are conical, and of equal size, strong and slightly hollowed at the tip; the toes, including the claws, are of the same form and length in either case. There are twelve feathers in each tail, and both have ten primary quills in the wings.

I must now proceed to describe these birds. The male in plumage has the crown of a brilliant golden yellow; nape, back and scapulars of a darkish brown colour, the latter being tipped with a dull white; rump, iron brown, the quills of a darker brown still, but paler on the inner webs; the tail is of a medium brown colour, and the lower and under parts of the bird are silky in texture, and the feathers of a dull white with slight dashes of red and some little yellow near the vent; the breast feathers yellow, but not so brilliant as on the crown. In the female the colours are, as is frequently the case with birds, of more sober tints, the crown being of a dull yellowish brown, with dashes of black in the centre of each feather; the nape, back and scapulars as in the male, and so are the quills, coverts and tail. The under and lower parts are of a purer white than in the male bird, and with no dashes of red or yellow near the vent feathers. The breast is of a dull yellowish brown running into a dull white beneath the lower mandible. The colour of the bill is somewhat lighter than in the male, but this may perhaps be due to change in a stuffed specimen. The colour of the female on the head and back is really not unlike that of our common house sparrow, a sort of dusky brown colour, though with a yellowish tinge. I have no doubt that this likeness to the sparrow (*Passer domesticus*) has been the reason why Europeans in the Straits of Malacca have for a long time called the baya the bottle-nested sparrow.

In flight also these birds somewhat resemble the sparrow, but though they not unfrequently build near the houses of men, they are not to be seen on the ground as in the case of their more impudent fellow coni-rostrals, but fly direct from their nests to patches of grass in the immediate neighbourhood, where

they may often be seen together in little flocks; they fly rather low, and are never to be seen in the open sky. They have no song, but a short sharp chirrup; they are very sociable in their habits with other birds and amongst themselves, and are readily and quickly tamed and taught tricks, very much in the same way as is the goldfinch with us—and who is there who does not appreciate this charming little bird, still fortunately to be seen in many a hedgerow in England?

It is now quite time for me to deal with what have been happily termed the "delicate labours of nidification." The bayas build two hanging nests quite separate and distinct: one for the male, which is open at the base, and has a grass perch for him to rest upon; the other for the female, which is cup-shaped at the base to form a cradle for incubation; this cradle has a depth of three inches, and is lined with the soft downy flowers of various grasses for both warmth and smoothness, and the eggs, which are pure white, number generally from three to four, the size of the egg being three-quarters of an inch in length, and half an inch in width.

These hanging nests vary in length from one to two feet, including the neck by which they are attached, and in width they average at their largest diameter from six to eight inches. These birds never build on very high trees, and usually choose the extreme outer branches of acacias, palms, and such like trees, and often the very end shoots of the bamboo. Wherever

there is a tree with flexible boughs overhanging a well or pool of water, they will fix their nests at the very tip of one or other of them; doubtless judging that in such situations they will be shielded from the depredations of their natural enemies, which are squirrels, snakes, and monkeys, though oftentimes the grey-necked crow will settle upon their nests and devour both eggs and young birds.

The grass from which the Indian baya builds his nest is usually the "kushâ" or sacred grass of the Hindus; it is one of the *Poaceæ* and is known with us as the dog's-tail grass. In the Malayan Peninsula they weave together the young shoots of the "lâlang" (*Gramen caricosum*) and sometimes what is called the "buffalo" grass, and other fodder and pasture grasses. Under difficulties they have even been observed to strip into narrow shreds the rigid leaves of the pine and sugar cane, and the green leaves of the millet, the Indian millet or *Sorghum vulgare*.

It is curious to notice with what care they fasten the first hold on to a branch or twig; the grass is literally rolled round and round, over and under, and here and there knotted, so that the nest may be able to resist the force of high winds; and then they twist and twirl on to it the lower portion, which is to form the neck, and this, I take it, is to enable the nest to vibrate like a pendulum with the easiest possible swing. In weaving the nest proper they may be seen working busily together, moving the grass backwards and forwards and in and out, always taking care to plant it in a downward direction, so as to act as a sort of thatch to keep off the rain.

On either side of the male nest, near to the perch, is always to be found adhering to the grass small bits of clay, or rather mud, but what this is intended for no one can surmise. Some say that it is to act as a whetstone to sharpen their beaks; others, from what natives have told them, think that the male bird puts a firefly or glow-worm on the wet mud, in order to act as a light

to cheer the female bird at night during nesting time. Mr. Layard, of Ceylon, who studied these birds, never met with a firefly in the nest, and though I have several nests with the mud, there is no sign of there having been any portion of an insect attached. Oliver Goldsmith in his "Natural History," 1816, has a note about this to the following effect: "The male bird keeps watch, and puts on one side a little tough clay, and on the top of this clay is fixed a glow-worm to afford its inhabitants light in the night." It must be left, therefore, like much else in the study of Nature, for future investigation.

The completed nests, when quaintly dangling from the trees, have all the appearance to me of being pear-shaped, except those that have the channel attached, when they may perhaps be compared to a flask or retort, as some naturalists have said. There are many of these nests on the same tree in the little territory that these birds have singled out for themselves, and when removed from the tree they will bear the closest inspection. I have taken out, from one or more, strands of grass of from eighteen inches to two feet in length, and it is worthy of note that though the nest has so great a length, the general form has been kept up throughout, as if the bird were working to an understood pattern.

I have referred to a channel; this is not attached to the female nest at first, but is added on, probably when the eggs are hatched, not only as a further protection from enemies, but to preserve the young from view, and possibly to restrain them within the compass of the nest when they become impatient of confinement. I have the female nests in all stages, from the incipient open nest to one where the channel has just been added; in others where it extends downwards for two inches or more, and with a "toothing" left, as builders would say, to be further carried on when desired, and I have one with a channel up to a length of eight inches. The diameter of this channel is not more than three inches, so though the old birds would be accustomed to the passage they formed for themselves, the young would need to be taught how to find their way through. In the construction of this channel perhaps, more than in the nest itself, it has been wisely ordained that though the little artisans differ somewhat in size; their beaks, legs and claws, which are virtually the weaving tools, correspond exactly in shape, form and dimensions, so as to enable them to work in perfect harmony together.

The nests weigh from two to five ounces, and those I have from India and from the Malayan Peninsula are identical in shape and in method of construction. I should add here that Dr. Balfour in his Encyclopædia tells us that the natives of India find a use for these nests in stuffing elephants' pads.

These baya birds are frequently caught in India with bird-lime by the bird catchers or "bheileyâs," who form a sticky substance from the milky juice of the banyan tree mixed with

oil; they carry this bird-lime or lasâ in a joint of bamboo called a "porree."

I have already referred to the uncommon sagacity and ingenuity of the baya bird, and how ready it is to be tamed by man, and to follow his instructions. I have not myself noticed that the Malay boy has ever trained them, but my friend Mr. Thomas Barlow has met with natives in many parts of India who bring them round for exhibition, perching usually upon a finger and tied round the body sometimes with a worsted cord of a red and blue colour, called in Hindustani a "dori." One of the little tricks they teach them is to hold a small ramrod within the beak, and to ram down a little gunpowder previously placed in a tiny brass cannon, and then to hold a lighted match and fire the cannon off. They are also taught to hold a threaded needle in the beak, and with it to pick up coloured glass beads, and to string them carefully on the thread. They will also fetch and carry flowers placed about by the exhibitor, and dexterously snatch off the sectarial mark, or "bindya" from the forehead of a Hindu woman who may be passing at the time. The travelling showman, if a well is near, will drop into it a small coin called a "fanam" in Madras, the twelfth of a rupee, and the bird will fly down the well and catch the coin in his beak before it touches the water. He will also hold in his beak a miniature "bunnéti" or torch, lighted at both ends, and whirl it round so as to form a double circle of fire. He appears to have every confidence in his owner, and no fear of danger when he is near.

Natives of India have of course their usual legends about these birds, as indeed they have in connection with most of the lower orders of creation in their country. It has been well said of the peasant class amongst them that "the little knowledge they have gained, was all from simple Nature drained." A monkey, say they, in a heavy shower of rain got upon a tree full of these baya nests, and the birds at once began to taunt him, saying, "You have the hands and feet of a man, and yet you are too lazy to build yourself a shelter as we do, and so get wet through." His reply was brief: "Wait till the rain is over, and then I will talk to you," and when it ceased he set to work and destroyed every nest, saying as he did so, "Now you will remember never again to cast ridicule at a mischief-loving monkey." The Malays are more given to attach a proverb or trite saying to either animate or inanimate Nature, and in regard to the singular grasp these baya nests have on a tree, their saying is "that he who could detach one of them without breaking it, would find a large golden ball within it."

It now only remains for me to thank my friends the Barlows for the assistance given me in nests and stuffed specimens from India, and also my son-in-law, Mr. Thomas Scott, and Mrs. Blundell Brown, for their kind contribution of baya nests from the Straits Settlements.

J. F. A. McNair,
Major R.A., C.M.G.

Scotia, Preston Park, Brighton.

CHARLES WATERTON AT WALTON HALL.

We have been favoured with an early copy of a work by the late Mrs. Pitt Byrne, entitled "Social Hours with Celebrities," * for the purpose of noticing, sooner than would otherwise have been possible, a description of a visit of six weeks to "Squire" Waterton in 1861. The whole book is of interest and charm, and edited in an illuminating manner by the author's sister, Miss R. H. Busk; but we must here confine our purview to the account therein of the great naturalist.

Walton Hall is a stone mansion constructed over arches on a rocky foundation set in a lake of from thirty to forty acres. We are enabled to give here a view of the front with the picturesque old water gate.

Walton Hall.

On entering the house the visitor's attention was soon attracted by the famous collection arranged on the spacious bay landings of the great staircase. Every specimen had been prepared and stuffed (with air) by the Squire's own hands. The range was wide. There were jackals and jackdaws, bisons and butterflies, the latter so delicately treated that the phosphorescence of some was still visible by night. Waterton's method of taxidermy was to extract the whole of the bones and flesh, then to soak the skin in a spirituous solution of corrosive sublimate in order to harden it. The skin, when removed from the solution, was placed before a fire and rapidly stiffened. During the stiffening process he would mould it into the general contour of the animal, and then hang it up to get quite dry and hard. So far a pupil's task is easy. It is in the subsequent modelling that Waterton's powers transcended those of his imitators. This was done with his fingers and with tools similar to those used in the modelling of clay, the particular places of the skin under treatment being moistened with warm water.

"He was able to impart to the specimens he manipulated not merely a correct outline but a vivified and natural pose." More, there was so much art in his labour that he could confer the graces of poetry and humour on his groups.

The following example (rather an extreme one) is given of humorous treatment:—

"Under a glass bell he had assembled the most noted of the reformers. Martin Luther was represented under the guise of a toad, Calvin under that of a serpent, and the rest under various other reptile shapes, all surrounding and

* "Social Hours with Celebrities," being the third and fourth volumes of "Gossip of the Century." By the late Mrs. W. Pitt Byrne, author of "Flemish Interiors," &c., edited by her sister, Miss R. H. Busk. 2 vols. (Ward and Downey, Ltd.)

attacking the Church, which soared above, under the travesty of a beautiful bird, but all in fun and not in malice, and when, as often happened, the Squire accompanied Protestant friends or visitors over his collection he would say with a roguish twinkle in his eye, 'Ye needn't look that way if ye'd rather not.'"

It will be remembered that Waterton, following the traditions of his family, was a very faithful son of the Roman Catholic Church.

Mrs. Byrne was invited to visit the room which was both his studio and bedroom. It was actually in the roof and open to the rafters. The furniture consisted of three crazy chairs, an old deal table (on which lay a pheasant under preparation) and a chest of drawers. There was no carpet, and no *bed*. His visitor ventured to remark on the bedroom lacking its essential "property."

"'Bed!' said he, 'aye, aye, that's always a puzzle to the few confidential friends I bring in here; but it's very simple: I'll soon show ye how I manage. Life in the wild woods,' he continued, 'teaches us to dispense with many things which encumber us in civilised life, though we get to consider them necessary, but I've long learnt that a bed is an absolutely useless luxury.'

"While speaking he drew out from some remote corner an oblong block of root of oak about two feet long, some nine or ten inches wide, perhaps eight inches deep; it appeared to be worn slightly hollow and was also much polished in the middle, but I did not guess its employment till the Squire, having pulled down the striped blanket I mentioned before, rolled it round him and lay down on the bare boards, for carpet there was none, resting his head on the block by way of illustrating his nightly practice.

"'There,' said he, 'it's soon done and very simple, and I'll answer for it none of you sleep more soundly than I, and after all,' he continued, 'my couch might be even *less* luxurious; don't you remember the story of the old Highland Chief in one of Walter Scott's prefaces, who finding his youngest son, a mere boy, sleeping on the battle-field with a huge snowball under his head, kicked it away, exclaiming, "What do ye want wi' a pillow? I'll nae hae such effeeminacy in my family"?'

"For thirty years this had been Charles Waterton's only sleeping accommodation, summer or winter, in health or in sickness."

Waterton was generally ascetic in his habits. On the death of his wife he was bent on leaving the world for a monastery, but was dissuaded by his confessor on the ground of the duty he owed to his infant son. He determined, however, to follow a monastic rule, though in an unostentatious way.

"The privations he imposed on himself were very hard, but unflinchingly carried out. I believe he wore a *cilice*, and as I have said above he never slept in a bed. He rose at five every morning at all times of the year, and passed two hours in his chapel, which was within the house. Already in early youth he had forsworn the use of fermented liquors of all kinds and hardened himself to other abstemious habits. His household moved like clockwork, and was regulated by a venerable old clock, very curious and antique in its workmanship, which had belonged to Sir Thomas More, from whom he was collaterally descended.

"At eight o'clock the breakfast-bell was rung, and on entering the spacious breakfast-room the Squire was always to be found before the fire toasting his own slice of bread, although he kept a regular establishment, including butler and footman. His breakfast consisted besides this dry toast of a basin of hot water in which he allowed himself one spoonful of tea, a minute quantity of sugar and no milk. For others, the table was loaded with well served, well cooked, Yorkshire fare, and a handsome cat of good old English breed, but of colossal size, named Whittington, or at least 'Whittie,' always sat beside him or on his knees and lapped cream and sugar out of a china bowl."

He was impatient of departure from the appointed rules of the house. "I once heard him say, that if the Queen, God bless her, liked to come to Walton, she should have the best of his homage and the best of his substance; but he should have to intimate to her Majesty that one o'clock dinner with tea at seven were the meal hours at the Hall.

"'How if it were the Holy Father, Squire,' said I.

"'As soon as His Holiness has set foot on British soil I'll let ye know,' he answered warily."

The story of his marriage is truly surprising. Being on his travels he stayed in Demerara, and made a close friendship there with a Scotch family—the Edmonstones of Cardross, Dumbartonshire—and a daughter being born to Mr. Edmonstone during his visit, Waterton asked her hand in marriage, on condition that she should be baptised into the Roman Catholic Church, and on attaining the age of eighteen, give a willing consent to accept him as a husband. The whimsical bargain was struck, and, more marvellous to relate, executed with every prospect of happiness and success. One year after the marriage his wife died.

It was a leading object of his desire as a naturalist to entice within his land such animals as he wished to dwell there. His method was to prepare suitable and attractive lodgings.

"It pleased this generous landlord to possess a colony of starlings, so he ordered a number of holes to be bored in the old tower, behind the water-gate, and, incredible as it may seem, no sooner were their habitations ready, than exactly as many *ménages* of starlings found their way to these openings, and built their nests within them, establishing their nurseries, hatching their eggs, and rearing their young, as if in response to the proffered hospitality. Finding his scheme so successful he next erected a couple of towers expressly for the accommodation of these interesting birds, securing them immunity from the inroads of vermin by building them on solid stone pedestals, and with excusable pride he used to show to his guests the successful results of his ingenious arrangement. During my stay the Squire frequently took me to visit these towers—certainly not 'towers of silence,' and made me acquained with a clever device of his own invention, whereby the interior of each little family could be seen and watched without in any way disturbing or alarming the feathered inmates. Each hole representing the entrance door was closed by a cubular stone, one side of which had been rounded off so that the parent bird had just room to enter, but when the patron wanted to make his observations the stone was easily removable, and such was the confidence of these birds in the paternal protection of their host that they never manifested the least alarm when he arrived to pass them under inspection.

"Many other birds he induced in a similar way to make Walton their home. Even the old tower and the ancient water-gate, though constructed as defences against war, and riddled with bullets, had to forget their original purpose, and the ivy which mantled them harboured innumerable nests where happy feathered parents paired, joyously and peacefully rearing their young. Here the owls he coveted flocked as soon as he had made ready for their reception. Indeed, he soon had owls of various species, by contriving such abodes as each according to its special habits preferred, and having secured them, each colony added a new pleasure to his life. The Squire's delight from boyhood had been the study of animal life, and none were too minute for his attention; the valuable knowledge he acquired by his close observation of the nature of each creature that came under his ken enabled him to dissipate the extraordinary errors vulgarly acquired, and ignorantly propagated respecting creatures hitherto reputed mischievous, whom he was able thus to prove were the most valuable auxiliaries to agriculture, and the most useful friends of mankind.

"The timidity of bird-nature, and the Squire's great love of winged creatures, whose affectionate recognition of his presence was one of the most wonderful sights I can remember at Walton Hall, suggested to him the absolute prohibition of the introduction of any kind of firearm within the grounds; and, strange to say, when the enormous increase of rabbits and rooks rendered it a matter of necessity that their number should be diminished, and recourse to the co-operation of guns and dogs became inevitable, so entirely did the feathered inhabitants trust to the character of their benevolent master that they proceeded with their daily avocations just as if nothing unusual was going on, apparently in no way apprehensive that any harm could be intended to *them*, and quite unconscious of the havoc a gun could produce. The water-fowl, of which there was a beautiful variety, comprising some exceedingly rare and curious specimens, floated leisurely away from the noisy reports, and seemed to think themselves perfectly secure on the opposite side of the lake, while the herons—perhaps to get a better view of the sport—perched on the highest branches of the trees till the *battue* was over.

"This heronry was one of his most successful achievements accomplished by the simple mode of attraction I have already described. No sooner had he completed the high stone wall that encloses the park than a colony of herons settled there, to his intense delight. One of his keenest enjoyments was to take his guests up to the telescope-room, where the instrument was always set in the direction of the heronry, in order that he might the more completely study the habits of its interesting inhabitants, and observe the strange construction of their nests, the curious positions they would assume, and the immobility with which they would remain standing for a surprising length of time on one of their long legs. As none was ever shot they formed a large community; for their greater delectation, the Squire contrived for them a running stream, by cutting a channel in the hill they had chosen to colonise, and as it flowed into the lake, the herons might be constantly seen frequenting its course alone or in company.

"One is almost forced to believe that the Squire possessed some special mode of making himself comprehended in the animal world, at least one is tempted thus to account for the mutual good understanding which subsisted between him and the inhabitants of his domain. That the poultry in the farmyard should cheerily greet him unbidden was not the most astonishing. The peacocks on the lawn, however depressing the weather, seemed to vie with each other the moment they saw him approach, in strolling eagerly forward, and spreading out the glory of their fantails for his delectation. Most remarkable of all, however, was it in the woods, where it was impossible not to believe the birds recognised their benefactor when one saw them come out to meet him, flying about him as he walked, settling on his shoulder, and even on his hand when he held it out to them, while a call from his voice would bring them from any distance.

"It is a very curious fact that when the good old man died, and his corpse was conveyed in a boat across the lake to the spot where his father was buried, and where he himself had desired he might be laid in a sequestered nook of the park, a flight of birds suddenly appeared, gathering as it went, and followed the boat to its destination."

Mrs. Pitt Byrne sought his views of the "future state" of animals, and asked him if he did not think that there were indications that they would have their part in the after life of human beings.

He replied rather dryly "The church has said nothing about it."

"'No,' I replied, 'but is not that perhaps because of its obviousness? If not what does St. Paul mean when he says "The *whole* creation groaneth and travaileth in pain until now," meaning the coming of Christ? Does not that, therefore, plainly demonstrate that there is no exclusiveness in the liberation of all created things?'

"'The church,' he again answered, 'has not made that an article of faith; let us be content with what we are *bound* to believe.'"

Walton Hall was a little kingdom, with the old Squire as its recognised monarch. His laws were all made to promote the comfort and well being of those who had voluntarily become his subjects. He was determined that their confidence should be justified, and not only were they supplied with food and shelter, but protected, at whatever cost, from molestation. He made streams, he planted trees singly, in clumps, in lines, and in forest-like proximity to suit the varying needs of his favourites. What was the consequence? "No denizen of park, lake, or forest at Walton Hall ever testified the smallest fear of molestation, all manifesting by their every action their entire confidence in the good faith of its owner and its privileged occupants."

To baffle poachers he would perch mimic pheasants in the trees. There were hundreds of these pious frauds, and their positions were frequently changed with acute foresight.

A curiosity in the park was a tree grown from a peach stone, accidentally cast into the hole of an old millstone lying on the grass. "The trunk had at first filled up this hole, but instead of allowing itself to be strangled by it, it had vigorously raised the stone from the ground, wearing it like a collar. This, for the Squire, represented the vigour with which England supports her huge National Debt."

Waterton gave a tenth of all his revenues to the poor. He also dedicated a part of a farm to St. Joseph, and most of the produce of "St. Joseph's acre" was appropriated to pious uses. The ancient custom of annually blessing the fields

in Rogation days had been maintained by the family from time immemorial. Mrs. Pitt Byrne was fortunate enough to be there on the occasion.

"The priest, preceded by the processional cross-bearer, and attended by two acolytes in scarlet cassocks and short white cottas, walked first, aspersing the soil and chanting the Rogation litanies, the responses being taken up by those

THE "JOHN BULL" TREE.

who followed. The little procession took its winding way round the farm lands, passing through here and there a copse or a clump of trees, from behind which it might be seen now and again emerging, or crossing a bridge, or gently sweeping round some farm building; the voices, as they chanted, floating on the air with a unison which told of the earnestness and sympathy of all.

"Immediately behind the priest walked the Squire bareheaded, and wearing his goodly eighteenth century costume, and heading his family and household, these being followed by the farm labourers and the Catholic villagers, delighted with the privilege of being associated in the pious rite."

SQUIRE WATERTON.

We are told that "Among his peculiarities was a strong objection to having his portrait taken in any shape or way, and it was a constant grief to his son and sisters-in-law that there would, at his death, be no memorial of his personality. One day they suggested to me to sketch him, if ever so slightly, as he dropped asleep in his chair after dinner, and it was only at their earnest request I complied. However, I greatly regretted this consent, as before I had marked down a dozen lines the good old man woke suddenly, and caught me so employed, casting on me, as I thought, a sort of *et tu Brute* expression, though he indulgently forebore to speak his complaint. I felt as if I had committed an unpardonable breach of the laws of hospitality."

The portrait given here is from a bust for which the material was a mask taken after death, and Mrs. Pitt Byrne's sketch.

J. L. O.

NATURAL HISTORY NOTES AND QUERIES.

A Reed Bunting's Nest.—Interest has been taken by some readers of NATURE NOTES in a reed bunting's nest "with a lid," which is in the Natural History Museum at Kensington. Here are two representations of the nest from photographs.

The nest was taken in 1894, by the late Major-General Maistre, from the bank of a stream near Bloxham, in Oxfordshire. A theory has been suggested that the birds intentionally made the lid as a protection against the weather. But, in the first place, it is contrary to all experience of the mental processes of birds that so large and sudden an advance in their architecture would be possible. In the second place, if such were possible, there is evidence that soon after the nest was found the "lid" stood upright, and would not remain shut when pressed down, thus being useless for protective purposes. The present ease in the hinge would then be due to frequent openings and shuttings, or relaxation in tension of the material from other causes. In the third place it is at least consistent with the appearance that the "lid" is only a layer of the horsehair lining which got loose and sprang up before the eggs were laid. This last is the explanation of Mr. O. V. Aplin. The nest may suggest speculations as to accidental variations in nests, which are favourable to the species, being factors in the evolutionary process as well as variations due to the idiosyncrasies of the builders. Birds are to a certain extent imitative in their nest building, and seem to be able to profit by experience.

London Birds.—Owls, I should imagine, still scarce though they be, must be increasing in the London vicinity, and if so this is a matter for great congratulation on the part of Selbornians. Mr. Macpherson tells of seeing an owl on two occasions almost in the heart of London, but does not mention the species. I myself saw a barn owl less than five hundred yards from Barnes station in August, and a friend, walking through Wimbledon Park, saw a tawny owl during the same month. Visiting Wanstead Park in September, I noticed a kestrel hovering over the big lake, but a few owls must be sadly needed there. Standing perfectly quiet among the bushes near the refreshment house, I was in a few minutes almost surrounded by rats, quite a dozen of them, all ages and sizes. The place seemed to swarm with them then, but perhaps by now a chance owl has discovered this happy hunting ground and thinned them out a little. The wren, as Mr. Macpherson remarks, is not a common London bird, still at times I find it fairly numerous at Battersea, notably all through the month of April, 1897, when several could be often heard singing at once; later in the year, on October 25, I heard one in Kennington Park. The black-headed gull, except for just the breeding season, is now almost a resident Londoner; besides his usual visit from September to April together with the lesser black-back, herring and common gulls, I noted a few during the intervening months in rather unlikely places, once over Dulwich Park, August 7, and again near the Oval station in the Kennington Park Road. Some black-headed gulls assume the breeding plumage very early in the season, while others, both old and young, so late as the middle of April were still without the brown hood. The lesser grebe successfully hatched off several broods in St. James's, but contrary to my expectations Battersea Park was almost deserted by them throughout the summer. The reed warbler nested in the latter park as usual, and the common and lesser whitethroats, willow warbler, blackcap and chiff-chaff were very frequent visitors, but excepting perhaps the first named, did not nest there. In previous notes I have called attention to the tract of foreshore left uncovered by the tide outside Battersea Park as a favourite haunt of various birds—starlings, crows, thrushes, pipits, wagtails, &c. Going, as usual, to give an eye to it early on the morning of August 10, I was delighted to see three common sandpipers apparently quite at home, whistling cheerily, and running up and down near the edge of the water, giving the characteristic flirt of the tail at frequent intervals. Sometimes they flew across to the mud flats opposite, but the park side evidently attracted them most, for after a few minutes they always came back. That same morning the river at low tide was so remarkably clear and still that I could see dozens of good sized fish, probably roach, in the shallows near the shore. The fish, for all one can tell by the eye, may be there the greater part of the year, but it is seldom the river is clear enough to see them. Hardly an October passes now without the grey wagtail showing itself in one or the other of the London parks. I saw the first arrival at Battersea this autumn, a beautiful cock bird, as early as September 12. The London sparrow is notably always ready for anything eatable that turns up, no matter what it be. I was watching a vulture feeding at the Zoo on November 1, when it chanced to

drop a small piece of flesh just torn from its daily allowance. In a moment a watchful sparrow had darted down through the bars, past the formidable beak and claws, and seizing the coveted morsel bore it off in triumph to a neighbouring tree top, where, joined by a crowd of hungry relatives, a beef steak banquet was soon in progress. Twice on Sunday, November 7, I had a somewhat cursory glimpse through the fog of a common scoter on the river, once near Lambeth, and again near the Albert Bridge. I wrote to the *Field* (November 13), and the editor in a footnote remarked that a flock of scoters had located themselves during the previous week off Canvey Island at the mouth of the Thames. The fog, and absence of traffic on the river, probably misled the bird I saw, causing it to wander much higher up than usual. Several greenfinches seen in a Kennington garden on December 17 is my last bird item of interest for 1897.

12, *Fentiman Road, S.W.* W. NAUNTON RUSHEN.

Hornets.—Having read the very interesting note on hornets (p. 16), perhaps I may be allowed to supplement it with a few observations. About fifty years ago there was a strong colony of hornets near my home when I was a lad, and I remember watching movements similar to those of Mr. Selous' experience. There was a stool of young ash sticks growing in a hedge, and near the surface of the bank the hornets, sometimes from half a-dozen to a dozen at a time, fed on the bark or took it for nest building, at any rate took off the bark extensively. A few years ago I also saw young ash saplings served as described on page 16. A colony had just previously been destroyed in a wood on Lord Windsor's Hewell estate. One of the ash sticks before referred to I had left when the hedge was laid. It is now a tree, and at the point attacked by the hornets is now about four and a-half feet in circumference and shows by the protuberances, or warts, where the hornets attacked it, and caused it to swell. Measured a foot above the attack the tree is quite a foot less in measurement with clear bark. I remember this same colony of hornets attacked dahlia stems just above the ground level, apparently for the juice exuding from the wound. Two hornets' nests near here I found in hollow willow heads this season, and neither were disturbed, I believe. I stood close up to the tress several times to watch their movements on many occasions, and although they scrutinised me very closely they never offered to sting, *unless molested.*

Astwood Bank, Redditch. J. HIAM.

Sparrows and Thrushes.—That tricks, especially knavish ones, soon spread among sparrows has been curiously exemplified on my lawn ; and the way they have been practised on the thrushes has been remarkable indeed. At first, as I related in a previous number of NATURE NOTES, a single sparrow took to snatching chafers. This practice continued for three or four days, and was then imitated by many others, but with improved tactics. The sparrows soon found it unnecessary to follow the thrushes as they searched the turf, but waited till they saw them digging, and then rushed up and stole their food. Meanwhile the thrushes began to wake up to the fact of being continually robbed, and often tried to fight the thieves. This proved useless, for merely keeping out of reach till the sparring ceased, two or three of them would surround a thrush, and even snatch the chafer from its mouth. Sometimes a thrush would run away or fly a short distance with a chafer in its bill, only to be pursued, mobbed and forced to stand and deliver. One poor mother was working in the sun with drooping wings for two hungry fledglings that dogged her steps. Did she secure a chafer, and they run up with open mouths as she turned to give it them, the sparrows ran up too ; there was a momentary struggle, a meeting of bills, but it was not her young that the mother fed. Thus it was that by the artfulness of a single bird a system of impudent robbery spread throughout my colony of sparrows.

Market Weston, Thetford. EDMUND THOS. DAUBENY.

SELBORNE SOCIETY NOTICES.

Donations towards Extinction of the Deficit.—The Council begs to acknowledge the receipt of the following donations with many thanks:—Mrs. Edward Phillips, £5; M. A. (per Miss E. K. Gamwell), 2s. 6d.; Miss Forpteen, 2s. 6d.; Mrs. R. B. Litchfield, 5s.; Mrs. B. G. Wattson (Clapton Branch), 5s.; A. P. Powell, Esq., 5s.; Anon., 5s.; Mrs. Blount, 5s.; A Friend (per Miss Hue), 2s. 6d.; Rev. H. E. U. Bull, M.A., 5s.; Mrs. S. J. Rogers, 2s.; Mrs. Croasdaile, 1s.; Mrs. Pratten, 6d.; Mrs. Silver, 10s.; F. D. Power, Esq., 3s. 6d.

Editorship of "Nature Notes."—On the resignation by Mr. Britten, Mr. Otter undertook, at the desire of the Council, to edit NATURE NOTES temporarily, pending the appointment of a permanent editor. The Council has invited Mr. S. C. Boulger to accept the editorship, and he has been able to do so. The April number of NATURE NOTES will be the first edited by him.

New Lecturers.—In addition to those gentlemen who have offered to lecture on behalf of the Society, the following have now kindly volunteered their services:—Alfred Dymes, Esq. (Prizeman, Advanced Botany, Science and Art Dept.), 80, Goldsmith Avenue, Acton; Graham Renshaw, Esq., Sale, Manchester. Applications can be made direct or through the Secretary of the Society. Mr. James Saunders, of Luton, kindly offers to give a lecture to Branches desiring it, entitled "The Romance of Natural History." There would be a slight expense for slides only. Applications should be made to Mr. Western.

Council and Committee Meetings.—The next meetings of the Council will be held on Tuesdays, February 1 and March 1, at 5.30, and of the Magazine and Leaflet Committee on February 15 and March 15, at 5.30. A special Finance Committee Meeting will be held on March 1, after the Council Meeting, at about 6.30.

NEWS FROM THE BRANCHES.

Clapton.—On January 8 Miss Edith J. Temple gave a most interesting paper entitled "History of Botanical Science," before a large audience. A vote of thanks was unanimously voted the lecturer at the conclusion.

Croydon and Norwood.—With the aid of lantern slides kindly lent by the Humanitarian League, Mr. E. A. Martin gave, on January 25, one of Mrs. Suckling's admirable children's lectures on "Sheep and Goats" to the children of the Seneca Hall Band of Hope. Slides illustrating the village of Selborne were also shown, the subject being dealt with suitably to the audience assembled. The chair was taken by Mr. E. H. Bayliss. An essay competition was announced, for which prizes will be given.

Southsea and Portsmouth.—Dr. J. E. H. Kelso reports that the Committee of this Branch has decided to approach the Hampshire County Council, with a view to prevail upon them to obtain an order under the Wild Birds Protection Acts for the protection of birds' eggs in the county.

Communications for NATURE NOTES should be addressed to the Editor of NATURE NOTES, 16, Vernon Terrace, Brighton, as should specimens for naming, books for review, &c. The Editor cannot undertake to reply privately to questions.

Letters connected with the Selborne Society, as well as all inquiries as to the supply of NATURE NOTES, and subscriptions, should be addressed to the Secretary of the Selborne Society, A. J. WESTERN, Esq., 20, Hanover Square, W.

Nature Notes:
The Selborne Society's Magazine.

No. 99. MARCH, 1898. Vol. IX.

SELBORNIANA.

Nature Notes.—In the last number of this magazine there was a formal notice that Mr. G. S. Boulger had accepted the editorship of Nature Notes, and that the April number would be the first edited by him. Mr. Boulger is Professor of Botany at the City of London College, a fellow of the Linnæan and Geological Societies, and the author of some valuable works entitled, "The Uses of Plants, a Manual of Economic Botany;" "Familiar Trees;" "Epping Forest and its Future Management:" and, in collaboration with Mr. James Britten, "A Biographical Index of British and Irish Botanists." We venture to think that the readers of Nature Notes are extremely fortunate in possessing Professor Boulger's services, and that under his direction the magazine of the Selborne Society will have a useful and prosperous career. A condition of success is, however, the generous support of such readers as are able to give it, and we hope that some remarks on this subject in the January number may be allowed to deserve a practical application.

The International Congress of Zoology.—The Fourth International Congress of Zoology is to meet at Cambridge on August 23 next, under the presidency of Sir John Lubbock. This will be the first meeting of the Congress in the British Isles, and no better place could have been selected than the seat of the University which can claim Ray and Willoughby, and Charles Darwin as members. A large Reception Committee has been formed who hope to avail themselves of the facilities offered by the colleges of Cambridge for the accommodation and entertainment of visitors, while the more suitable of the public University buildings will probably be also placed at their disposal.

A cordial invitation is given by the Executive Committee to members of the Selborne Society to be present, and it is to be hoped that many members will be able to attend the Session.

Wolmer Forest.—In the last number of Nature Notes the progress up to that time of the movement to make Wolmer Forest a sanctuary for wild animals was recorded. A communication from the Secretary of State for War has now been received by Mr. Whitburn. Lord Lansdowne expresses his sympathy with the aims of the memorialists, and believes that the system now in force is the best for obtaining the results desired. He sends a copy of a letter received at the War Office from the Secretary of the Aldershot Game Preserving Society. The letter is as follows:—

"Aldershot, *January* 8, 1898.

"Sir,—With regard to the protection of bird life in Wolmer Forest I have the honour to report as follows:—

"(1) I took over the management of the Officers' Shooting Association (in connection with the Government ground in question) in 1895, and since that date all birds have been strictly protected by my orders.

"(2) No birds except game birds have been allowed to be shot.

"(3) All hawks, owls, and other birds have been carefully preserved as far as possible. The heronry has gradually increased from one nest a few years ago to about twenty nests now, and nearly fifty young herons flew from the nests in 1897.

"(4) Foxes also are strictly preserved.

"(5) But I beg to point out that this preservation both of birds and animals is carried out with extreme difficulty owing to the destruction carried out by the gamekeepers on private land all round the forest. In my opinion, to make the preservation a success, a large area round the outskirts of the forest should be included in the scheme for protection. For instance, hobbies and hen harriers have visited the forest during the last three years, but their lives are not safe outside the forest.

"In conclusion, I have to state that the Game Association has taken since 1895, and will take, every means in its power to carry out the suggestions in the memorial referred to; but these efforts are more or less nullified by the action of people outside the forest.

"I have the honour to be, Sir,

"Your obedient servant,

"A. H. Cowie, Captain R.E.,

"*Hon. Sec. Aldershot Game Preserving Association.*"

It would seem, then, that the forest is already a sanctuary except for game. The memorialists have, perhaps, allowed their zeal to outrun their discretion in engaging the interest of the public before obtaining a knowledge of the facts, but the

general approval of the scheme which has been evoked is a pleasing symptom of the tendency of opinion.

CHURCHYARD BOTTOM WOOD.—The London County Council, on February 22, voted £5,000 towards the purchase of this wood. The scheme, therefore, can now be carried out.

AN INCIDENT IN CLERICAL LIFE.

I AM the vicar of a large, new church placed in the "slums." Our work is amongst poor people, but the congregation at the midday celebration of the Holy Eucharist on Sundays is largely composed of wealthy, fashionable, and would-be fashionable women. On such occasions there is, therefore, a fair exhibition of the prevalent taste in dress.

I read Mr. W. H. Hudson's letter, in *The Times* of December 25, on the trade in birds' feathers, and especially in "ospreys," "torn," as he writes, "from birds slaughtered when feeding their young." Well may he write fervidly! The following words gave me a painful shock: "*With bitterness it must be acknowledged by everyone who retains any shred or vestige of a creed, that the clergy, as a class, turn a deaf ear to all appeals for help in this direction*," and the suggestion is made that they fear to face a decrease in the offertories as a consequence of preaching uncomfortable doctrine. Alas, that, contrary to the principle of the Anglican Church, many of the clergy in towns are now more or less dependent on the offerings of their congregations! But if the main charge be true the motive would not be solely pecuniary. The fashion in feminine ornament is a thorny subject to treat of in the pulpit for several reasons, and I must confess that when I imagine the serried ranks of women with nodding crests "settling down" for the sermon I understand how a joyful eagerness may not be felt for the task. But St. Paul condemned ornaments which indicated mere vanity or frivolity; and this is a case of cruelty, and a sin against maternity. Many religious women, though strenuous advocates of the principle of verbal inspiration, seem to employ in practice a selective and discriminative method in applying the teaching of the Apostle of the Gentiles. They need, it would seem, an Apostle of the *Genteels*, as Manning was once called. I do not quite share Mr. Hudson's admiration of the London vicar who, "fired with a spark of his Master's spirit, feared not to tell his congregation that he preached not to fill but to empty his church." Surely his Master sought to draw the people to Him, not to drive them away. Human hearts must have implanted in them a faculty of response to right teaching, or what is our hope? No doubt the London vicar meant

that the fear of emptying his church would not restrain him from plain speaking if necessary, which is a different thing.

For myself I can honestly enter a plea of ignorance hitherto; possibly culpable ignorance, the ignorance of passivity, but I have not, like the deaf adder, wilfully stopped my ears. The wearing of many feathers has, indeed, seemed to me of doubtful taste, and possibilities of cruelty have occurred to my mind, but no "appeal for help" has reached me, nor have I known anything of the vile trade in the feathers of the poor white egret, though so old a story, as it seems it is, to naturalists. Now I know better. But it occurred to me that before preaching I should learn accurately the facts of the supply of feathers generally, and be able to make true distinctions. It is easy without preparation to denounce cruelty at large, but then the words are not likely to stick. It is easy without preparation to denounce the particular cruelty to the egrets, but this wrong, though so plain, would, if made the subject of sermons, suggest questions and speculations about the destruction of other animals which I, with my present equipment, might find it difficult to answer. It is true that we clergy when in the pulpit have a privilege—the privilege of the blessed Glendoveer, in "Rejected Addresses,"

> "I am a blessed Glendoveer,
> 'Tis mine to speak and yours to hear,"

but the advantage is often only temporary.

In view of the incessant slaughter of animals by man (seal-skins and ivory came to my mind) I must, I thought, form clearer views than I have at present of the right moral relation between man and the animal world, and be able to apply the test of some reasonable principles to the treatment of lower forms of life.

It is also a consideration that most people know little outside the experience of their daily life, and that little has not much practical influence. There must be explanation as well as denunciation. Such were my thoughts, which will not be taken, I hope, to indicate a lukewarm feeling

Some two weeks afterwards, when I was in the church waiting for those who had parish business to transact or who sought counsel, a young girl came in to see me; I must call her Miss Standard; a good and innocent girl, anxious to serve the Christian cause in the parish. Her family is wealthy. Alas! she wore "ospreys" in her hat.

When the business of her visit was done I said, "Will you let me speak to you before you go about your hat?"

"Oh, yes," she replied, though surprised at so unexpected an opening; "I hope you like it."

"It is a very pretty hat, but those feathers in it I do not like."

"Oh, dear!" she said, "I always get my hats at Mrs. Henry's. We think her taste so good, and she took such pains with this."

"You are, I daresay, thoughtless about such matters, but those feathers were got at a shocking cost."

"Oh, they really did not cost *very* much. I don't think I am extravagant."

"No," I said, "I did not mean that. Do you ever read *The Times?*"

"No, my father always likes to keep *The Times* all the morning, and there never seems to be time to read papers after luncheon."

"Well, I am sure," I said, "that you believe in a sanctity in animal life. You remember the words about the sparrows, 'one of them shall not fall on the ground without your Father.' The Creator, then, watches over His creatures. The death of each is regarded. When we presume to take a life His eye is on us. Must we not justify such an act as well as all our other acts?"

"Oh, yes," she cried, "I am sure that is true. I felt it the other day when my brother killed a robin with a catapult."

"Our sense of a sanctity in life may," I continued, "get dulled by the spectacle of slaughter before our eyes always. It is the law of the world that life must be sacrificed for the maintenance of other life. All life and movement is carried on by a constant transference of energy. But the educated conscience of man makes some very clear distinctions. It limits his rights to take the lives of others, the creatures of a common Creator, to such as are necessary for his own preservation; that is, for the sustentation of his life, the health of his life, and the safety of his life. But even within this rule no unnecessary infliction of pain is allowed. What then are we to say of those who, merely to trick and deck a hat, not only slay an innocent bird, but leave its young to die by slow degrees?"

"What have I done?" she cried, "tell me what you mean?"

I then told the story with which I had by that time become well acquainted. When I had finished her eyes were dim. She wished to tear out and leave the feathers behind. She could not bear to be seen in the street with them.

"It is a generous impulse, but I think there is no need to treat Mrs. Henry's masterpiece so roughly. Wait till you get home, and accept my 'dispensation' for the short interval."

"Well," said she, now smiling, "I will take your dispensation and a four wheeled cab."

I have not yet finished my sermon.

Siskins.—During the present winter I have noticed more siskins in this locality than in all other seasons combined. For this visitation I am unable to account. They feed on alder seeds and follow the course of streams. I am informed they breed sometimes in Scotland. The distribution of birds in various localities is very interesting, but quite unaccountable to my mind; for instance, the common buntings are as plentiful as robins a dozen miles away, or even occasionally much nearer, yet I never see one in the immediate neighbourhood. Meadow pipits in flocks are frequently seen in winter, but never in summer, yet they breed plentifully in Sutton Park, near Birmingham.

Astwood Bank, Redditch. J. Hiam.

THE WILD CATTLE OF CHARTLEY, STAFFORDSHIRE.

THE interesting account in the December number of NATURE NOTES of "The White Cattle of Cadzow," by Mr. McCabe, will probably make a few notes on the Chartley Wild Cattle, belonging to the Earl of Ferrers, acceptable to our readers. But it must first be pointed out that Mr. McCabe is in error in stating that the Lyme Park herd still exists, the last surviving animal in this herd having been shot in 1885.

The Chartley Herd of Wild White Cattle is, like that of Cadzow, of great antiquity; but whether the present animals are directly descended from some one of the ancient native species, such as Bos Primigenius, Bos Longifrons, &c., or whether they are descendants of domestic cattle introduced by the Romans and run wild, is still an undecided question. The former theory certainly appears to be supported by the fact that remains of Bos Primigenius have several times been unearthed in Staffordshire, and, only last year, a number of semi-fossilised horn-cores of cattle were discovered during excavations in gravel beds on the banks of the Trent, near Stone, and these horn-cores, both in size and curvature, &c., strongly resemble the horns of the Chartley cattle. Professor Boyd Dawkins has, however, given it as his opinion that these horn-cores belonged to domestic oxen of the strain of Bos Urus, the aboriginal wild ox of Europe, from which all our larger breeds are descended.

The most striking characteristics of the Chartley cattle are the heavy and deep body, with long and level back (most important points in the eyes of the agriculturist), the horns growing out of the head horizontally and slightly downwards for some distance, and then curving upwards. Their colouring is pure white, with jet black ears, muzzle, hoofs, and tips of horns; the hair is somewhat coarse; and on the top of the head between the horns there is a mass of long curly hair in both sexes, forming a regular "mop-wig." In the bulls the horns are often shorter and straighter than those of the cows. The only varieties in colour are either "ticking" of black upon the legs (more especially on the front legs and shoulders), which is always regarded as a blemish, or an entirely melanistic variety, in which case the calf is always killed. The old tradition, that whenever a black calf is born it portends a death in the Ferrers family, was, a short time since, explained by the old keeper who attends to these cattle thus—"It is true in one sense that the birth of a black calf portends a death, for the calf *itself* is always killed."

Mr. Brown, in "The Natural History of Tutbury," states that "we should probably have lost the whole of the Chartley breed of cattle had it not been for the provident care of William, Earl of

Derby, who, in the reign of Henry III., conveyed some of them from the Forest of Needwood to his park at Chartley, where they have ever since been carefully preserved, and the breed kept in its original purity, under the vigilant superintendence of his descendants the Earls Ferrers." This fortunate rescue of these cattle took place, no doubt, in consequence of the passing of the Charta Forestæ in the ninth year of Henry III. (1225), which enacts in Chapter X. that all lands which had been afforested by Kings Henry II., Richard I., and John, except the proper demesnes of the Crown, should be disafforested and freed from the forest laws so as to remit to the former owners their rights. Upon this disafforesting the wild cattle, deer, and game, no longer having the protection of the former very stringent game laws, soon began to diminish in number, and in some parts of the country became entirely extirpated.

The theory that the Chartley breed of wild cattle is indigenous appears to be further supported by their general habits at the present day. When alarmed they start off at full gallop for a short distance, then turn and face their foe in a semi-circle, with the bulls in front, the cows behind, and the younger animals and calves still further in the rear. If further approached these tactics, which are clearly those of wild animals, are repeated, or the adversary is charged and attacked. Again, they conceal their young in fern or long rushes, and the cows, when calves are born, become exceedingly fierce and dangerous, especially if an intruder should get between a cow and her calf. The affection of the cows for their young is excessive, as with most wild animals, but if the calves are touched by human hands the cows will frequently desert their offspring. The calves, which are

born in all months of the year, are, from birth, extremely pugnacious, if disturbed; running at and butting anyone who may attempt to interfere with them, and they cannot be tamed sufficiently to be trusted.

Some years ago this herd became greatly reduced in numbers, only about a dozen animals then surviving, but owing to the care bestowed upon them, the herd at the present time numbers fifty-three head, made up as follows:—three old bulls, two younger bulls, two bull calves, thirty-five old cows, eight yearling cows, and three calves born since last Christmas, and the herd has only once exceeded this number (when it reached fifty-six) within the memory of man. Some of the older animals are necessarily killed off every year, and the only means of doing this is by shooting the victims with a rifle. Desperate encounters sometimes take place between the bulls for the lordship of the herd, and some animals get injured in consequence.

The food of the Chartley herd consists of the very coarsest grasses, and in winter of the coarsest hay, rushes, and dried bracken, provided for them in open sheds, which afford a slight shelter from the cold winds which blow across the open park. Some years ago a portion of the park was drained at great expense so as to produce a better herbage and finer grass, but it was soon found that the richer food did not suit the cattle so well, and the land was allowed to revert to its marshy nature. The home of these cattle is situated on high ground some 300 feet above sea level, and was enclosed about the year 1200, and forms a portion of Chartley Park, some five miles from Uttoxeter, the nearest town. The extent of this wild tract of table land is about 1,000 acres, covered with coarse grass, rushes, stunted bilberries, and heather, and patches of luxuriant bracken fern, with a few clumps of old weather-beaten Scotch firs and birch, which afford some shade from the hot summer sun. Little rills of pure water course down the little valleys which slope downwards from the higher ground, and ponds lie hidden here and there, trampled around the edges into deep mire in which the cattle delight to stand knee deep in hot weather. Among the other denizens of this wild primeval tract are herds of red and fallow deer, which live in perfect harmony with the lordly cattle; an occasional fox or badger, which may sometimes be seen in the very early morning crossing the park on his return from a midnight foray to the thick woods which afford some shelter to the park from the northern blast; multitudes of rabbits which jump up at every step, with no doubt a few of their natural enemy, the stoat, and voles (both the common vole and red bank vole), moles, long-tailed field mice, shrews and their natural enemies the weasel and the adder, the latter often to be seen sunning itself on the dead fronds of bracken, which its colouring frequently so closely resembles as to cause it to be passed by unobserved. Of birds, alas, but few beyond the wheatear, whinchat, skylark, pipits and an occasional carrion crow, jay,

magpie, or a woodpecker, are now to be seen on this moorland waste; and owing no doubt to the exigencies of game preservation and the cruel pole trap, those noble hawks, the peregrine, buzzard and kite are all gone, and the useful owls, kestrel and merlin are seldom to be seen. May the Wild Birds Protection Acts and County Council Orders soon begin to have good results, some of our rarer wild birds *perhaps* returning to give pleasure to all Nature lovers.

It may be interesting to mention that a fine herd of white cattle, very strongly resembling the Chartley breed, are to be found at Lamphey Court, near Tenby, in South Wales; they are said to belong to an old Welsh breed, but in colour and general appearance it is difficult to distinguish them from the Chartley animals. May not these Welsh cattle also be direct descendants of the original British wild ox?

John R. B. Masefield.

Rosehill, Cheadle, Staffordshire,
Feb. 15, 1898.

LIVING ANIMALS IN THE POST.

WE know from the Postmaster-General's annual reports that living animals are frequently sent by post. Amongst these have been specified snakes, rats, frogs, and a kitten provided with a feeding bottle with tube attached. Now the suffering which transmission through the Parcels Post entails upon the poor creatures committed to the Post Office can scarcely be appreciated by those who are ignorant of the exact workings of that great Department of the State. Let us draw aside for a moment the veil which divides the official from the unofficial world. We will suppose that a parcel of frogs is handed in at a Post Office, say in the vicinity of Great Andrew Street. The parcel is neatly packed in a small box, with no indication upon it as to the name of the sender, or as to the nature of its contents. It is placed amongst other parcels, with no regard, necessarily, to which side is uppermost, so that the frogs may be just as likely upon their backs as upon their legs, and probably packed in such a way that it is impossible for them to right themselves; there they await the collecting van as it goes its round to the various offices in the district. The parcel, unless it be marked "fragile," is counted with others into a bag or sack, and it may be placed in any conceivable position or place in the sack. The sackful finds its way into the van, either by being lifted carefully thereinto, or by being swung upwards with a "one, two, three," like a carcase of butcher's meat. The parcels marked "fragile" are carefully eliminated in the counting process, and if the frogs be so marked they escape the trial of the sack, and the sole discomfort

they would then have to sustain is a series of minute jars in the handling, since they would be packed separately and not inside the sack. Thus their first stage of transport is completed, and they arrive at one of the parcel depôts. Here they are de-carted, in much the same way as they were carted, and if "fragile" are carefully stacked, heads or tails uppermost, and, if unmarked in any way, are probably emptied out upon the floor to undergo the process of sorting. After a series of gyrations they finally come to rest, and when sorted, are again packed in a locked hamper destined for the head office of the district in which the consignee resides. If for Oxford and a few other places the frogs would have the benefit of a journey by coach; if for a town not served by coach, they would have a more merciful journey by rail. The frogs would probably require a few days' rest in which to recover their normal spirits. All this, of course, only supposing the parcel in which they are packed does not come to pieces *en route*. Sometimes, however, the packing falls to pieces, and then of course the surreptitiously-packed creatures are exposed to view.

We do not hesitate to say that the despatch of living creatures by this means is wrong and is utterly indefensible. True lovers of Nature need scarcely be included amongst those for whom this article is written. But there are many to whom a living creature is but another anatomical specimen to be dissected, and they deem it of little moment whether it has a few hours of torture before death or no.

Many an exciting chase has taken place in a Post Office for some innocent unoffending frog or lizard. At other times more deadly animals have been discovered, and have had to be disposed of; scorpions from the scorching plains of Egypt have at times been met with. A box containing pigeons was once returned to the sender, after some delay in obtaining his address. Mice are not at all unusual passengers by Her Majesty's mails, but for the sake of the safety of Her Majesty's humble and dutiful Post Office officials, it is particularly pleasing to learn that only one consignment of 500 leeches has, at present, been discovered on its journey through the Parcels Post.

When a consignment of living animals is discovered *en route*, the delay in obtaining the address of the consigners and in returning it to them, adds still more to the cruelty of the practice, and only when the animals happen to pass through the hands of a more tender-hearted official than usual is it likely that they will obtain any kind of nourishment beyond sawdust and carbolic acid.

It may be within the recollection of some that a lizard was discovered in the process of passing through the Post Office at the Guildhall, on the occasion of the jubilee festivities ten years ago. The ridiculous action of the sender was, however, surpassed by that of presumably one of the sorters, who being under the impression that water was its native element placed the poor creature in a jar of water in full view of the public.

But what is the regulation of the Post Office on the matter? "No living creature, nor anything likely to injure any officer of the Post Office, may be sent by post at all. If it be tendered at a Post Office it is refused, or if detected in transit it is detained. The contents are liable to be dealt with in such manner as the Postmaster-General may direct, and the sender is liable to prosecution by the Department."

If it be distinctly understood that the senders are liable to prosecution, and if the regulation be enforced with due severity, the cruel practice of sending living creatures by post will perhaps be stopped.

A. L. O. N.

MID-MARCH.

THE new year is waking into life. Winter will not indeed give way to the coming spring without yet another hard struggle or two, and for a time may perhaps make a stand, but it cannot be for long. The sweet breath of the spring-tide can be felt in the air; the slumberous time is past and gone.

A ladybird is found sunning itself on some warm sheltered bank, or perhaps a humble-bee swings past with his loud cheery hum on his way to the sallow bushes whose beautiful downy catkins are a great attraction to many insects. Every day now brings some new and welcome sight, sound, or scent to our notice, as one creature after another is brought under the influence of the sunbeams, and feels their quickening power. The honey bees have found out the crocuses and are revelling in their sweetness. It would be hard to find anything much more beautiful than a yellow crocus seen in the clear morning light, growing, not in a flower bed, but on grass or moss. The liquid glowing colour of the petals seems to light up not only the whole plant but its surroundings also. Unnoticed, the humble but pretty ground ivy has already started into growth, and is creeping about the more sheltered hedge banks. Here, too, the fresh vivid green of the "lords and ladies," chickweed, and sheep's parsley begins to show through the bleached grass stems of the past year. Here and there the lesser celandine has unfolded its glistening yellow petals, gladdening our eyes with its beauty as it shines like a jewel amid its setting of deep rich green.

No summer birds have as yet arrived, unless it be a stray wheatear here and there, nor have the winter migrants departed. The harsh savage call of the grey crow is still heard as he wings his way overhead. Turning his head from side to side he scans the ground beneath with his piercing gaze in search of something to satisfy his hunger. Flocks of fieldfares still wander restlessly

from place to place, but do not intend leaving us for several weeks to come. The pretty chaffinch is arrayed in his nuptial dress. Since January his colours have waxed brighter and brighter, and he has now attained his full beauty. The cap of the little blue tit is bluer than ever, and his waistcoat of a brighter yellow than in mid-winter. The half-starved redwings, the stonechats, pied wagtails, and meadow pipits, which during the depth of winter frequented the sheep-folds, are now leaving them and returning to their favourite haunts. In the meadows the water rats are hurriedly crossing and recrossing the ditches, full of urgent business of some sort.

On a mild still evening at this season it is pleasant to sit for a while on some stile or gate and listen to the newly-awakened voices of the spring. The glorious melody of the blackbird is heard but sparingly at present, but the thrushes are singing. Though their voices have not as yet acquired their full power, their music is prolonged till it is almost dark. Thrushes often suffer terribly until the worms move up to their summer levels.

Gradually the sounds of human occupations grow less frequent. The shouting of men and boys, the barking of dogs, the noises of the chopping of wood, or of the creaking wheel of some cottage well, have almost ceased, and there is only a subdued rumbling of distant wheels, and a few answering barks of dogs, some perhaps miles away. Mellowed by distance such sounds have a drowsy, soothing influence. The partridges continue their challenging call long after dusk (at the full moon I have heard it at midnight). The loud startling cry of a water hen comes at intervals from the sedgy margin of a neighbouring ditch.* A few peewits have arrived at their breeding ground, and their tremulous note, neither scream nor whistle, falls fitfully on the ear, as the birds wheel and tumble above the distant marshes.

From the same direction there comes the piping of a snipe, like the syllables, "tit but, tit but," repeated many times in succession, the two sounds about equally accented. Another snipe is "drumming" overhead, and his curious goat-like bleat, as he dashes obliquely downwards, seems at one moment far off, and at the next close at hand, now high up in the air and now near the ground.

The frogs are not yet in full chorus, but an occasional subdued croak arises from a shallow swampy pond close by, a solemn, deep-toned note, soothing as the cooing of turtle doves in leafy June.

A little later there will be hundreds of these vocalists here,

* The strange habit this bird has in early spring, of leaving its accustomed haunts and flying abroad at night, passing over villages and roads and uttering now and then loud cries, has given rise to many conjectures as to the cause of these strange nocturnal voices in the air. They are not infrequently attributed to some kind of owl.

and on a warm still night it is well worth a long walk to hear them. The manyblended voices rise and fall like the sound of distant church bells borne on the wind; now almost dying away, and again swelling to a mighty roar. At present the toads have not reached the water, but their weak chirping note will soon be heard, as they make their way from their winter retreats, under logs, stones, roots of trees and holes in dry banks. So wary and alert are the frogs at this season, that in order to see, or even to hear them to advantage, one has to approach with the utmost caution—the sound of footsteps or the passing of a cart near their haunts silences them at once. On hearing any unaccustomed noise, the whole array of bright eyes and pointed snouts disappears as if by magic, subsiding at once to the bottom. A sort of boiling, bubbling appearance is seen on the surface, as each frog strikes hurriedly upwards with his hind legs making for the rotting leaves and soft mud below where all lie hidden till the coast is once more clear. It is generally a long time before they again venture to show their noses above water. Presently, however, one of the boldest pops up his shining, polished head, and, after a time, perceiving no enemy by, summons courage to utter a faint croak. Gradually one after another follows suit, till the chorus is once more in full swing. On cold windy evenings there is no frog music, and even when the weather is fine and warm there are occasions when, from some reason best known to the performers themselves, no concert takes place.

G. T. Rope.

THE VISIONARY.

It must be true, I've sometimes thought,
That beings from some realm afar
Oft wander in the void immense,
Flying from star to star.

In silence through this various world,
They pass, to mortal eyes unseen,
And toiling men in towns know not
That one with them has been.

But oft, when on the woodland falls
A sudden hush, and no bird sings;
When leaves, scarce fluttered by the wind,
Speak low of sacred things,

My heart has told me I should know,
In such a lonely place, if one
From other worlds came there and stood
Between me and the sun.

II.

At noon, within the woodland shade
I walked and listened to the birds;
And feeling glad like them I sang
A low song without words.

When all at once a radiance white,
Not from the sun, all round me came;
The dead leaves burned like gold, the grass
Like tongues of emerald flame.

The murmured song died on my lips;
Scarce breathing, motionless I stood;
So strange that splendour was! so deep
A silence held the wood!

The blood rushed to and from my heart,
Now felt like ice, now fire in me,
Till putting forth my hands, I cried,
"O let me hear and see!"

But even as I spake, and gazed
Wide-eyed, and bowed my trembling knees,
The glory and the silence passed
Like lightning from the trees.

And pale at first the sunlight seemed
When it was gone; the leaves were stirred
To whispered sound, and loud rang out
The carol of a bird.

W. H. Hudson.

F. A. MALLESON: A REMINISCENCE.

Some readers of Nature Notes may remember an article entitled "A Vicarage Garden in North Lancashire," in October, 1896, written by the Rev. F. A. Malleson. He died on November 14 last, aged 78, at his beautiful vicarage, Broughton-in-Furness. By his death the Selborne Society has lost a true friend and the magazine a staunch supporter, who by every means in his power introduced it to the notice of others of like tastes to his own. He was born in London on June 19, 1819. His mother was a Vaudoise, and he was sent to the school founded by Pestalozzi at Yverdon, Canton Vaud. He subsequently, after an unusual interval, went to Dublin and graduated there as B.A. in 1853 and M.A. in 1860. He was ordained deacon in 1853; priest in 1855. In 1870 he accepted the living of Broughton-in-Furness. I first met him in, I think, 1876 or 1877, and in later years, when I stayed in his parish for several months at a time, we became friends. Our favourite pursuit being the same—botany—there was never any lack of subject for conversation. He was, it seemed to me, more a man of culture than of learning; possibly others who knew him better may not agree with this on account of his various books on religious matters. He certainly had caught some of the spirit of Gilbert White, and infused as much as he could into others. He told me he could not recollect the time when plants were not a source of interest to him; certainly when he came to England he knew more than the generality of young men and made the best use of his time. For some years he lived at Pulborough in Sussex, and became acquainted with William Borrer of Henfield.

Even in those early days he possessed some of that power of attracting friends which characterised his later life, for Borrer corresponded with him on botanical topics, and once when a critical species was in question, drove over to his village and took him away for a long day's work in the field. Capital training, one would think, and evidently not lost, for he was a good botanist of the old school. Without much faith in the "splitters up," he could be very hard on the others, the "lumpers up," when a well marked variety came in his way. The eighth edition of the "London Catalogue" was by no means a thing of joy to him, and what he would have said to the ninth, there is, perhaps fortunately, nothing to show. He never saw it. I kept a copy to surprise him, but had no opportunity of doing so. The outcome of Borrer's influence was a MS., "Flora of Sussex." It was occasionally quoted by H. C. Watson in his "Topographical Botany," but never, I think, printed. After the exploration of the Broughton-in-Furness district, he contemplated a flora of the limited area of his parish, but the project was never realised. Possibly the change in the manner of such books caused by the publication of Trimen and Dyer's "Flora of Middlesex," and the difficulty of working up the old authorities (for unless this is done no writer can tell the value of his records) caused the subject to be put aside.

When it was possible to do so he spent his holidays on the continent, so his early botanical bias was allowed full play throughout his life. At home much time and thought were spent on the garden, of which he gave the account mentioned at the head of this notice. It amply rewarded him, and was a place of pleasure to his friends. A tent on one of the lawns, close to a magnificent tulip-tree, was the writing room in which much of his work was done, but his occasional descriptive essays were almost entirely written on the spots described. Probably no Selbornian carried the love of "out of doors" more thoroughly into practice than he, for when not obliged either to visit or write, and the youthful craving for exercise being a thing of the past, he was sure to be found somewhere in the garden, unless the weather was entirely unfit, and then there was the tent for a haven.

Naturally, as time went on, and the band of lively young people who accompanied him dispersed into the world, the walks which were once so enthusiastically enjoyed became shorter, but the teaching and example had not been in vain. Of that he had ample proof. He was a good geologist and knew a little about birds and insects.

In all the time of our acquaintance I never heard him say a hard word about anyone. Once he wished that a troublesome person would migrate to another part of the county. A great reader and a book-buyer, he was not by any means a collector. The books were bought for use, and from a collector's point of view he was not careful enough as to the edition. As a Wordsworthian, he might have put to shame many of the officious dogmatisers on both the poems and the localities. Living within a mile of the Duddon he knew the river from source to sea, and the last literary work on which he was engaged was on "Wordsworth and the Duddon." It was beautifully written and illustrated and well received, the number of the *North Lonsdale Magazine* containing it running rapidly out of print. It was reported, how truly I know not, that he intended to enlarge or partially re-write it, and re-publish in book form with more illustrations. If this be done it will be the best illustrated account of the river that has been placed before the public. This I write advisedly, as there is a series of sketches by the late William Hull, charming things. These are now guarded with care by their fortunate possessor, a Manchester gentleman.

His friendship with Mr. Ruskin was a privilege which he highly valued. Ruskin's "Letters to the Clergy" were addressed to Mr. Malleson as the representative of a local Clerical Society. They were edited by Mr. Malleson, and published together with essays and comments of his own, and numerous critical letters from others, under the title of "The Lord's Prayer and the Church, Letters to the Clergy, by John Ruskin, D.C.L." The book is well known.

S. L. PETTY.

WITH NATURE AND A CAMERA.

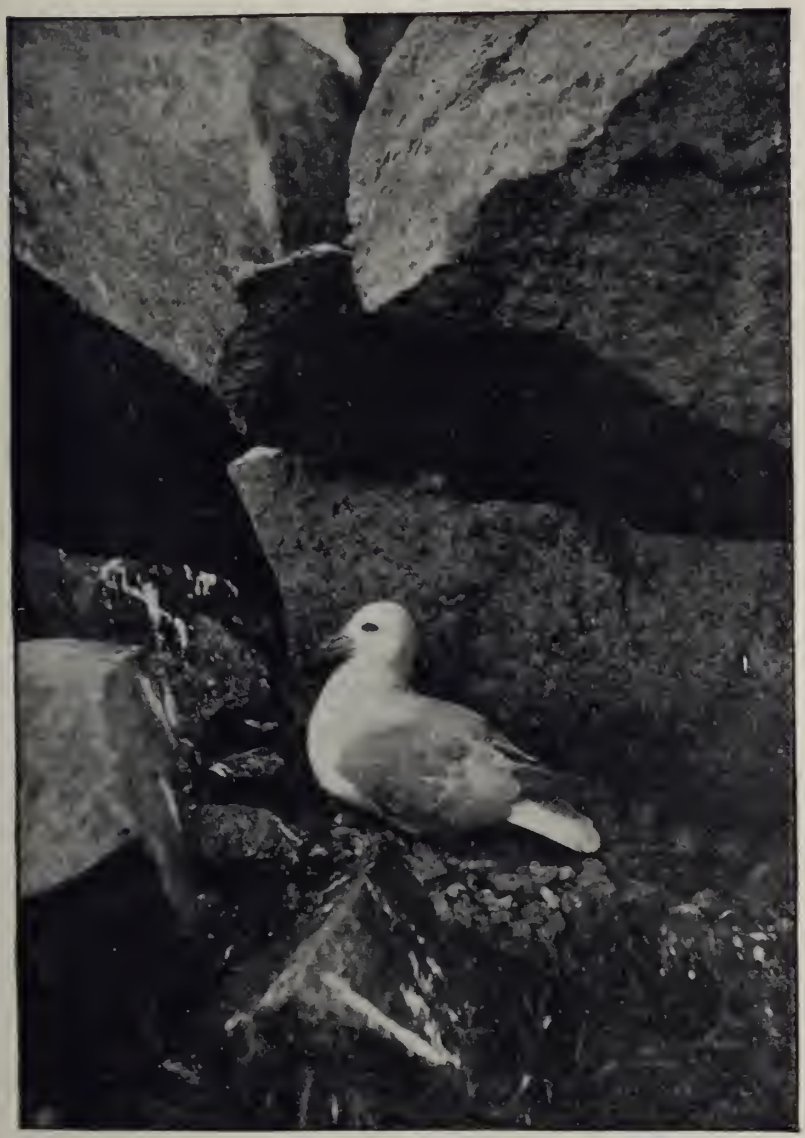
"With Nature and a Camera, being the Adventures and Observations of a Field Naturalist and an Animal Photographer." By Richard Kearton, F.Z.S., illustrated by 180 pictures from photographs by Cherry Kearton. (Cassell & Co., Limited.)

DESCENT OF A CLIFF.
From "With Nature and a Camera."

This book has a merit of a new quality. It contains numerous representations from photographs of wild animals in their native haunts, and transacting the business of their lives. To obtain such photographs great pains must be taken, considerable dangers encountered, and hardships endured. But that is not all. Skill in photography, a nice faculty of observation, and, not least, the ability to remain perfectly still for long periods of time are required. Thoreau could remain still, and owed to this rare physical accomplishment much of his success in the observation of animals.

In the first part of the book is described a visit to St. Kilda. This is of great general interest. The inhabitants being in communication with the world for three months only in the year have a distinctive character, and many of their habits and notions are archaic. To a large extent fowling and egg collecting is the industry of the island. Some of the natives have acquired astonishing dexterity in catching birds with rod and line, at the end of which is a running noose of horsehair and gannet quills plaited together. As many as 620 puffins were once bagged in a single day by one of the author's friends.

At St. Kilda, the photographer performed many feats of cliff climbing with his camera. The accompanying illustration shows how a descent was made. "Cliff photography," it is said, "although really not very dangerous, is at first rather trying to the nerves." In this way many excellent photographs of birds, nests, eggs, and young were obtained. We are enabled to reproduce one, that of a fulmar petrel on its nest. The remarkable and unpleasing faculty which this bird has of squirting oil at a too "curious impertinent" is well known. This particular fulmar so attacked Mr. Cherry Kearton. The first discharge failed. The oil travelled three or four feet "describing a kind of half circle, and falling short of the mark," but Mr. R. Kearton writes: "As the photographer got nearer and commenced to fix up his apparatus amongst some huge boulders, I noticed the bird moving her head and neck rapidly up and down as if trying to remove some obstacle from her throat. In less than two minutes she again ejected a quantity of oil, and, as



FULMAR PETREL ON NEST.

From "With Nature and a Camera," and here reproduced by permission of Messrs. Cassell & Co.

my brother had actually crept within a yard of her, with much greater precision and effect."

Observations were made of the St. Kilda wren, its nests and eggs, and these are a contribution to the question of the specific difference between the St. Kilda and mainland wren. The range of the authors in their quests has been wide, and visits have been made to the Farne Islands (where the manners of cormorants were studied), the Hebrides and the Saltees amongst other places. But the wild life of the home counties has not been neglected, and there are numerous illustrations of little-known aspects of incidents in the lives of very well known birds.

There is much, too, about duck decoys, gamekeepers, poachers, and bird-catchers, and the experiment of the two enthusiastic naturalists is altogether quite successful.

NATURAL HISTORY NOTES AND QUERIES.

Ferret and Trout.—The following letter appeared in the *Aberdeen Journal* of January 22:—"I have fished and shot about sixty years between the Derwent and the Thurso Rivers, and during that time I have had and seen many struggles with rod and gun, but yesterday I had the great pleasure of seeing a novelty which, I think, you will say is the latest in trout fishing. While ferreting rabbits on the bank of a small stream running through a wood, on the ferret coming out of a hole and running up the edge of the stream I was much surprised and the ferret delighted to see a trout leap out of the water and fall on the gravel in front of the ferret. The ferret came to the charge with tooth and nail, but the trout slipped and wriggled under, over, and all around, but only to have a fresh attack made with more voracity. It was a considerable time before the ferret could realise that he could hold his own with such game. I then creeled them both. J. ROBSON, Gamekeeper.

"*Clova, Aberdeenshire.*"

Sparrow Hawk in the House.—The Rev. W. V. Vickers, of Knowle Grange, Sidmouth, tells of finding a male sparrow hawk in his dining room on January 19. There was no caged bird in the house, the window (a sash-light) was not open more than eighteen inches, and there was no looking-glass opposite to the dining-room window. Mr. Vickers' only theory is that "he may have been in pursuit of a tit—many of which we attract near the same window by means of bones and cocoa-nuts—and missing his stroke, swooped round the corner of the house and was in at the window before he knew where he was."

Mr. Vickers released the hawk, to the mingled pity and disgust of his gardener who, to the plea that the *hens* were the poachers, replied, "It was by means of such as he that there would soon be more of them about." The gardener may perhaps claim a logical superiority.

Unseasonable Phenomena.—Mr. Richardson, gardener to Lord Middleton, at Wollaton Hall, reports that nests with eggs of thrush and robin were found there about January 20.

We have received two lists of wild plants found in flower in January. One from Miss M. S. Powell, of plants observed in the neighbourhood of Reigate is as follows:—Senecio vulgaris, Bellis perennis, Capsella Bursa-pastoris, Lamium purpurcum, Ulex europæus, Stellaria media, Lamium album, Mercurialis perennis, Veronica agrestis, Cardamine hirsuta, Euphorbia Peplus, Galium saxatile, Corylus Avellana, Veronica Buxbaumii, Draba verna, Ulmus campestris, Potentilla Fragariastrum, Matricaria inodora, Ranunculus Ficaria, Taraxacum Dens-leonis, Daphne Laureola, Erigeron canadensis, Veronica hederæfolia, Urtica urens, Chærophyllum sylvestre, Cerastium vulgatum, Fragaria vesca, Taxus baccata, Tussilago Farfara, Primula vulgaris, Hypochœris radicata.

The other from Mr. R. F. Towndrow, of plants observed in the neighbourhood of Malvern, is as follows:—Ranunculus repens, R. Ficaria, Brassica Rapa,

Capsella Bursa-pastoris, Cerastium triviale (in large bud), Stellaria media, Geranium Robertianum, Geum urbanum, Potentilla Fragariastrum, Sherardia arvensis, Bellis perennis, Achillea Millefolium, Matricaria inodora, Tussilago Farfara, Petasites fragrans (not a native—ED.), Senecio vulgaris, Crepis virens, Taraxacum officinale (= T. Dens-leonis), Primula acaulis, Veronica hederæfolia, V. polita, V. agrestis, V. Tournefortii. V. serpyllifolia, Stachys arvensis (in large bud), Lamium purpureum, Mercurialis perennis, Urtica urens, Corylus Avellana, Poa annua.

Mr. Alfred Markham, of Sutton, Cheshire, reports that the plovers have not this winter left their breeding grounds on the moors near Macclesfield. Their practice is to leave in October and return in the spring. He supposes that the supply of food has not failed during the mild winter.

A Clever Pony.—From a young friend at Abbotsbury, who always reads her NATURE NOTES, I have received the following story in a letter. I give it in her own words:—"The other day when we were having lunch we heard a strange scratching sound, and then as if some one was trying to turn the handle of the door. Our housemaid went and opened the door to see what it was, and there stood the baker's pony and cart; his master had left him in the road while he went to the next house, and the pony had turned round and himself tried to open the door. Of course we were much amused to hear what it was, and the door was shut again. The next minute came one loud decided knock, evidently from the door knocker. 'That can't be the pony,' we all cried, at the same time rushing to the door—but it was. He was standing with his front feet on the pavement, quietly waiting, and very pleased at his success. Of course we gave him some bread, biscuits, and sugar, as a reward for his cleverness. He must have taken the knocker in his teeth. . . . This is really almost good enough for NATURE NOTES, is it not?" I think it is, *quite*.

4, *Thurleigh Road, Balham.* WILLIAM WHITWELL.

Experientia docet.—Is the following experience more general than I know of? To me it was unique. I have a kitten, not yet fully grown. Last week she caught her first mouse, with which she played in orthodox feline fashion. Suddenly the mouse disappeared down her throat—alive, unbroken, unmasticated, fur, tail, bones, flesh, and palpitating heart, all undisturbed. The kitten was in great distress, and cried more like a child than an animal. I took her up and she looked at me and left off crying, but when I put her down she stretched herself out under the kitchen table, her body pressed close to the ground and all four paws wide out. She shivered strongly, but was silent. My cook, whose especial property she is, took her up and put her inside the kitchen fender, where she lay for hours in an almost death-like state, her eyes glazed, she herself absolutely powerless, like a bit of cotton wool more than a creature with bones and muscles. After some time, when I was free, I went into the kitchen and took her in my arms, calling her by her name. She opened her eyes and knew me—it was a very human look—then shut them again. We put her on the table but she could not stand, though she lapped a little milk, then went back to her lethargy. By the next morning she had digested her furry elephant and was all right. Is this a common mistake for a kitten to make with her first mouse?

Malvern. E. LYNN LINTON.

Communications for NATURE NOTES should be addressed to Professor BOULGER, 34, Argyll Mansions, Addison Bridge, W., as should specimens for naming, books for review, &c. The Editor cannot undertake to reply privately to questions.

Letters connected with the Selborne Society, as well as all inquiries as to the supply of NATURE NOTES, and subscriptions, should be addressed to the Secretary of the Selborne Society, A. J. WESTERN, Esq., 20, Hanover Square, W.

SELBORNE SOCIETY NOTICES.

Field Club.—A meeting of the Field Club Committee will be held at the Society's Rooms, 20, Hanover Square, W., on Tuesday, the 15th inst., at 6.30 p.m., to appoint guides and to make preliminary arrangements for the rambles during the coming season. Ladies and gentlemen who are willing to conduct any of these Saturday rambles are invited to attend the meeting, or if unable to be present should notify the Hon. Secretary of the Field Club (Mr. Ernest A. Nash), who will send them a list of vacant dates and any desired information.

Council and Committee Meetings.—The next meetings of the Council will be held on Tuesdays, March 1 and April 5 at 5.30: of the Magazine and Leaflet Committee on March 15 and April 19 at 5.30; a special Finance Committee Meeting will be held on March 1 at 6.30.

NEWS FROM THE BRANCHES.

Bath.—On Tuesday, January 25, there was a large gathering at the Museum, Terrace-Walk, to hear a lecture by Mr. M. H. Scott, I.C.S., given under the auspices of the Selborne Society, on Stonehenge. Mr. Scott's lecture, which was splendidly illustrated, was chiefly historical, and it showed a thorough grasp of his subject. Mr. Scott said first impressions of this place were usually disappointing—it looked so small. Then one saw how grand it was and how impressive it must have been when entire. He invited attention to the large stone called the Friar's Heel, and said this, as well as the so-called slaughtering stone, were sarsen stones. There were others like them—popularly known in Wiltshire as "grey wethers." The stones forming the inner circle were not known, and antiquaries disagreed as to where they came from. In giving the history of Stonehenge, so far as it was known, Mr. Scott said it was first named in the middle of the twelfth century. There was very little doubt that the Druids used them as they used other stone circles in different parts of the country. None of these other stone circles, however, possessed the same peculiarities as Stonehenge. He suggested that the origin of Stonehenge might be found much further back than the Druids. Having quoted, amongst others, the opinion of Mr. Story Maskelyne that Stonehenge was erected B.C. 947, and that it was constructed as an observatory—an idea he did not agree with—Mr. Scott dwelt upon the history of Britain in its early days, and discussed other theories as to the origin of Stonehenge. He thought it was extremely improbable it had been built for a crematorium. The place had certainly been used as a consecrated spot—probably by the builders. On the motion of the Rev. H. B. Barry a hearty vote of thanks was accorded to Mr. Scott, who briefly replied.

Birmingham.—The annual meeting of members of this branch was held at the Council House, Birmingham, on January 18. The Lord Mayor (Mr. Beale) presided. The Secretary, Miss D. C. Sturge, read the report. The number of members remains about the same as that of last year. Numerous Selborne leaflets have been given to the pupils in various schools, and during the summer notices to excursionists have been placed in places of popular resort. The scheme of offering prizes to children in Board Schools for the best answers to set questions has been extended. More than 2,000 papers of answers were received, some of which, of course, furnished remarkable information. The income was £45 15s. 2d., and the expenditure £64 17s. 5d., the deficit being £19 2s. 3d. The Lord Mayor moved the adoption of the report. He said in the course of an interesting speech that he thought that the work of the Society was more beneficial in towns than in the country. From towns came the "tourists," whose behaviour generally made it impossible for nature to exist in its most luxurious condition in places which they frequented. Half the vandalism which occurred was due to ignorance. People had no discrimination between what was rare and what was not; they did not know how to take up a plant, nor whether it would grow when transplanted. Those who, like himself, obtained their knowledge by being collectors, knew that it was almost necessary to commit some destruction in order to get information. He did not suppose that the Society aimed at suppressing legitimate work in search of information. If it did, then it could not flourish, because it would carry its principles to an absurd degree. It could, however, induce people who began as collectors to abandon the gun for the field glass. The motion was carried. The Lord Mayor was elected President, and Miss C. D. Sturge, Secretary.

Nature Notes:

The Selborne Society's Magazine.

No. 100. APRIL, 1898. Vol. IX.

SELBORNIANA.

Tree Planting on Hampstead Heath.—The Parks and Open Spaces Committee of the London County Council have issued a report with reference to their action in planting trees on certain parts of Hampstead Heath. Objection having been made to the trees planted near the Willow Road and the Spaniards Road, on the ground that as they grew they might obstruct the views towards Highgate and London, the committee pointed out to the objectors that the trees near the Willow Road were intended to take the place of willow trees planted by the lord of the manor forty years ago which were fast decaying, while those near the Spaniards Road were ornamental and were intended to check the scour of the fine sand which, owing to the decay and disappearance of the coarse grass and gorse on the steep slopes between the road and the Vale of Health, washed down in great quantities after rain and choked the storm-water pipes. Trees of light foliage were here preferred, such as birch and mountain ash, which would not interfere with the growth of gorse, broom, and briar. In planting the trees care had been taken not to interfere with vistas and distant views. The fir plantations on the heath, planted by the Metropolitan Board of Works about 1870, were also being thinned and about 100 trees removed east of the Spaniards Road and about 90 trees on the west and north-west Heaths. The subsoil of Hampstead Heath consisted principally of fine Bagshot sand, and, owing to the increased use of the Heath and the consequent wearing away of the coarse grass and gorse, it had been found very difficult to preserve the undulating character of the Heath. Where the sand was exposed, every storm washed considerable quantities of it from the hillocks into the hollows.

The best way of checking this scour of the sand was to plant suitable trees and grasses where the gradients were steep, and it was in order to encourage the growth of gorse that they were advised in 1895 to cut out the dead wood in the gorse plants, which were blackened and sickly owing to the severe frost. It was a mistake to suppose that trees were not suited to Hampstead Heath, as they had always flourished there and they afforded food and shelter to songbirds, which were now found to be returning to the Heath, owing to the operation of the Wild Birds Protection Act.

The Scarcity of Birds in Hertfordshire.—Mrs. Brightwen in her article entitled "My Sanctuary," quotes a statement made by Mr. Joseph Nunn in the *Transactions of the Hertfordshire Natural History Society*, that birds are becoming rarer in that county, and that the cause is the stupidity of gamekeepers and gunners, as well as the spreading of suburban London. A correspondent signing himself "A Lover of Nature" has been reading a letter by Mr. Nunn in the February number of *Knowledge*, on egg collecting in its relation to science. "A Lover of Nature" writes: "Mr. Nunn admits having taken, between March 19 and May 13, 1889, 13 clutches of blackbirds' eggs, 52 eggs in all; in addition to which he speaks of 20 clutches of sparrowhawks' eggs before him, and 600 clutches of the common house sparrow in his cabinet. The latter birds are, of course, common enough, but the system of taking clutches is greatly to be deprecated, and would, I feel certain, be condemned by members of the Selborne Society. I am glad to say that the editor of the *Naturalists' Journal* absolutely refuses to insert advertisements of clutches of eggs for sale." If the members of the Hertfordshire Society generally require such large quantities of material for their studies, "A Lover of Nature" thinks that Mrs. Brightwen might add another cause for the lamented decrease of birds in her part of the country. Mr. Nunn's enquiries were directed to the questions why light-coloured eggs occur persistently in the clutches of some species, and occasionally only in others; and why the colouring is at the small end of eggs of some species. His observations of the blackbirds' eggs seem to prove that exhaustion of pigment is not the cause of light-coloured eggs.

The Portmadoc and Beddgelert Railway.—The following letter from Miss Atkinson, of Barmouth, appeared in the *Manchester Guardian* for February 5:—

"Sir,—May I beg for space in your paper in order to explain in detail the course of the proposed railway between Portmadoc and Beddgelert? I quote from a letter received this morning from the secretary to the Commons Preservation Society:—'As it approaches the pass the railway will be nearly a third of a mile from Pont Aberglaslyn, and almost opposite this point it

will enter a tunnel 280 yards long, from which it will emerge near the northern end of the pass and on to an embankment on the eastern side of the river. It then crosses the Glaslyn and runs a short distance to the west of the road until it passes Beddgelert, after which it again approaches the river. A portion of the bed of the river Glaslyn (*i.e.*, to the centre of the stream) for a considerable distance to the north of the pass is within the limits of deviation, and it may be thought desirable to ensure that no embankment or other works shall encroach upon the bed of the river.' To any one who knows the neighbourhood it is plain that this is hardly less fatal to the whole Glaslyn valley than if the pass itself were traversed. Is it possible that any one is insensible to the hatefulness of a railway bridge or a railway embankment beside a lovely road across a mountain stream? Beddgelert—long unrivalled in situation and secluded charm—will of course be entirely ruined. And for what end is the whole nation to be robbed of this bit of beautiful scenery? To 'open up' Beddgelert, we are told. That is to say, instead of a delightful walk, or drive, or cycle ride of eight miles along a perfectly easy and perfectly lovely road, the tourist may get himself whizzed from Portmadoc to Beddgelert in a shorter time and be taken through a tunnel instead of strolling through the Pass of Aberglaslyn. And on reaching the end of his interesting journey he will find himself in a spot the once famous beauty of which is gone. Any one who shares my desire to protest against this folly and to make an effort to save this rare bit of natural beauty will be interested to read the following clause from the Light Railways Bill :—'If any objection to any application for authorising a light railway is made to the Light Railway Commissioners, or if any objection to any draft order is made to the Board of Trade on the ground that the proposed undertaking will destroy or injure any building or other object of historical interest, or will injuriously affect any natural scenery, the Commissioners and the Board of Trade respectively shall consider any such objection and give to those by whom it is made a proper opportunity of being heard in support of it.'"

The Royal Buckhounds.—"Denials," says the *Daily Chronicle*, "have been made of the tortures suffered by the tame deer hunted by the Royal Buckhounds on December 10, 1897. We have before us the sworn depositions of two men, one of whom helped to drag the deer out of the water, while the other poured brandy down its throat. The first is that of William Pursey, of Reading, who deposes :—'I hereby declare that when the said animal entered the river for the last time I saw about half a dozen hounds follow it and surround it in the water. I saw some of them get upon it. When the deer was secured and brought to the towing-path it lay helpless and gasping. Liquor from a flask was poured down its throat by one of the mounted followers, wearing scarlet, which liquor did not, however, revive it.

As the deer lay by the river side I distinctly saw raw places about its body, particularly the hinder parts, where the skin had been torn away. Its head and ears also bore marks of injury.' The second witness, Frederick Cummings, also of Reading, swears that he held the deer's mouth open while 'liquor from a flask was poured down its throat,' and bears out Pursey's statements as to the raw places on the animal's body. The affidavit continues:—'Together with several other men I helped to lift the deer across a meadow to Mr. Colebrook's farm premises, and to put it into the deer-cart. The animal up to this point was unable to walk of itself.' On this we have a word to say. References have been made to the Queen's opinion in the matter. Now we may say from personal knowledge that the Queen, whose love for animals is conspicuous, has for many years been opposed to the practice of stag-hunting. There is no doubt, however, that her Majesty regards herself as being in the hands of her Ministers, and we imagine that she would not propose to take any action in a matter which involves a more or less political appointment. The question is one solely for the Prime Minister of the day, Liberal or Conservative. If he will put down the stag-hunt he will know that he does so in complete harmony with the Queen's wishes. If he does not do so, he is simply yielding to the desire of this person or that to retain a post continually associated with odious barbarities."

CHURCHYARD-BOTTOM WOOD, HIGHGATE.

SIX years have passed since the present writer first called the attention of the readers of NATURE NOTES to Churchyard-Bottom Wood, at Highgate. There could be no question that at that time it was unknown to a large number of Londoners, including not a few living in the comparative neighbourhood. A few words of description were a necessity then, but by this time, considering all that has been said about this unique piece of woodland in the daily press, any further words of praise on my part would be superfluous. I content myself with saying that the view from the dip in Muswell Hill Road, below Southwood Hall, is absolutely the most striking in the north of London, whether in winter or summer.

It was only within the last year or two that the danger of destruction of the wood, long possible, became imminent. Here in the south of England one cause of ruin to natural scenery, namely, mining and manufacturing industries, is, most fortunately, in a very large degree wanting. But in its place throughout the whole metropolitan area the building trade is pursued with a surpassing avidity. Having had no check from

severity of weather during the last three winters, its impetus has increased enormously. Had Churchyard-Bottom Wood been subjected to the auctioneer's hammer at the expiration of the time originally granted in which to procure the subscriptions for its purchase, few of the trees would have been standing by this time, and in their place a great many houses.

Perhaps never since the time of the public acquisition of Parliament Hill and Fields has any open space been fought for more strenuously. The labour of the Joint Committee appointed to help in the work of rescuing the Wood is well known: the amount of local interest excited shows how untiring is the energy of those influential inhabitants of Hornsey and Highgate. It would be ungracious not to refer here to the activity and exertion of the late Mr. H. R. Williams, who was indeed a pioneer in the cause of open spaces in the north of London. To show the position of affairs at a recent date, a paragraph from the *Hampstead and Highgate Express*, December 25, 1897, is here quoted in full:—

"Last week, at the offices of the District Council, Mr. G. W. Willcocks, C.E., held a public inquiry on behalf of the Local Government Board into the application of the Hornsey District Council for permission to borrow £10,000 for the purpose of paying their contribution towards the proposed purchase of Churchyard-Bottom Wood. Having heard evidence in support of the proposal, Mr. Willcocks promised to report as early as possible to the Local Government Board.

"At the meeting of the London County Council on Tuesday, the Parks and Open Spaces Committee recommended:—'That the Council do approve the estimate submitted by the Finance Committee, provided that the expenditure is within the borrowing powers of the Council for the time being, and do authorise the payment of a contribution of £2,500 towards the acquisition of about fifty-two acres of land at Highgate, known as Churchyard-Bottom Wood, the land to be maintained for public recreation by the Hornsey District Council.'

"Mr. Shaw-Lefevre moved as an amendment that the recommendation should be referred back to the committee, with instructions to consider whether the proposed contribution should not be increased. He narrated the circumstances under which the scheme for the acquisition of the place arose. If this important open space was to be secured for the people of London, it was absolutely necessary that the Council should contribute a larger sum than was proposed. The Middlesex County Council had contributed £5,000, the Hornsey Urban District Council £10,000, the Islington Vestry £2,000, and private donations amounting to £5,577 had been received, and, as the amount asked for the land by the owners, the Ecclesiastical Commissioners, was a very moderate one, he felt justified in asking the Council to increase its proposed contribution.

"Dr. Napier seconded the amendment, which was carried by a large majority."

The above quotation does not call for much comment, and all will have learned with pleasurable satisfaction that Mr. Shaw-Lefevre's spirited and successful reversal of the late London County Council Parks Committee's recommendation to subscribe only the sum of £2,500 has had the ultimate effect of the contribution being raised to £5,000, and that sum practically completes the purchase.

It has been proposed that part of the Wood, if purchased, should be set aside as a bird sanctuary, in which even the more

shy of our feathered songsters may find a safe refuge in which to rear their broods. This idea has probably been a valuable means of attracting subscriptions, is deserving of all support, and is a pledge that will have to be made good to those who have given their money conditionally upon the birds being cared for. It must be remembered, however, that no part of the open space can be railed off from the public, save temporarily for the purposes of planting and gardening. Vigilance on the part of the police and other attendants in enforcing the laws against bird-catchers, and nest- and egg-stealing in the close season, will be the best safeguard, and this will have to be most stringently carried out. For the rest, provided they are unmolested, the birds may be left to manage for themselves. Parts of the Wood there must be which will probably be less frequented than others, and few will credit the protective instinct that birds possess in concealing their nests. I believe it is a common mistake to think that because nests cannot be found, therefore there are none.

Furthermore, what is just as important, though quite as hard to bring about—Churchyard-Bottom Wood should be a plant sanctuary. To many minds flowering plants cannot appeal in the same way as organisms endowed with a higher form of life; but all will agree that they are none the less "pleasant and lovely in their lives." Both gathering and uprooting (for one leads to the other) in a spot so near the heart of London should be entirely forbidden.

It remains, in conclusion, for members of the Selborne Society who dwell in the neighbourhood of the metropolis to be grateful that yet another open space has been spared. A few glances at the many woodcuts in Knight's or Walford's histories of London and its suburbs will reveal the singular quaintness and beauty of many a rural spot, now covered with sordid and crowded streets. It may be argued, possibly with justice, that no such gloomy fate awaited the fair slopes of Churchyard-Bottom Wood. Not in the near future, may be, but granting that even mansions had been erected on the hill-side, what guarantee was there that a hundred years hence they would not have been pulled down and have given place to streets of small houses. The various bodies that have striven together to complete the hard work of purchase have done wisely and well. In the eyes of future generations will they be found equally deserving of the motto ascribed to the honour of the builder of St. Paul's Cathedral—"Si monumentum requiris, circumspice." They fashioned not the Wood, indeed, but they saved it.

ARCHIBALD CLARKE.

Gilbert White's MSS.—Mr. W. Ruskin Butterfield, of 3, Stainsby Street, St. Leonard's-on-Sea, writes to say that, as he is preparing a new edition of White's "Selborne," he is anxious to borrow for a few days a catalogue of the sale of White's MSS. on April 26, 1895, and would prefer one marked with prices and names of purchasers.

CHRISTINA ROSSETTI.

EVERY reader of Christina Rossetti's poetry must realise how real was her love of nature, animate and inanimate; and Mr. Mackenzie Bell's recently published memoir prompts me to make some notes illustrative of this vein in her character.

Christina Rossetti lived a life quite apart from the noisy whirl of society, and troubled herself but little about the many questions of the day in which some women concern themselves. The only movement we hear of her being associated with was that against vivisection. In the biography just referred to we find the following paragraph:—"Mr. Theodore Watts-Dunton has well said about Christina that she spoke of wild animals sometimes as though they were human beings, and sometimes as though they were fairies. Indeed there is no doubt that her attitude towards animals had something very remarkable in it. She had a predilection for all animals, even mice not being thought of with disfavour," and in an article in *Good Words* for December, 1896, we find the following reminiscences from the pen of Mrs. Frend. "Most of all I used to wonder at and admire the way in which she would take up, and hold in the hollow of her hand, cold little frogs and clammy toads, or furry many-legged caterpillars, with a fearless love that we country children could never emulate. Even to the individual whisk of one squirrel's tail from another's, or the furtive scuttle of a rabbit across a field or common, nothing escaped her nature-loving ken; yet her excursions into the country were as angels' visits, 'few and far between:' but when there, how much she noted of flower and tree, beast and bird"!

To some readers the following extract from "Eve" may be new; Eve is weeping over Abel, slain by his brother, and thus the lowlier creatures are supposed to sympathise with her:—

"Greatest and least
Each piteous beast
To hear her voice
Forgot his joys
And set aside his feast.
"The mouse paused in his walk
And dropped his wheaten stalk;
Grave cattle wagged their heads
In rumination;
The eagle gave a cry
From his cloud station;
Larks on thyme beds
Forbore to mount or sing;
Bees drooped upon the wing;
The raven perched on high
Forgot his ration;
The conies in their rock,
A feeble nation,
Quaked sympathetical;

The mocking bird left off to mock ;
Huge camels knelt as if
In deprecation ;
The kind hart's tears were falling ;
Chattered the wistful stork :
Dove-voices with a dying fall
Cooed desolation."

In a poem entitled "Brother Bruin," the story is told of a dancing bear who had an unkind master. The bear dies, and the cruel master goes to the workhouse :—

"There he droned on—a grim old sinner
Toothless and grumbling for his dinner,
Unpitied quite, uncared for much
(The ratepayer not favouring such),
Hungry and gaunt, with time to spare ;
Perhaps the hungry, gaunt old Bear
Danced back, a haunting memory.
Indeed I hope so ; for you see
If once the hard old heart relented
The hard old man may have repented."

Some very charming lines are to be found in a poem entitled "To What Purpose is this Waste?" from "New Poems" :—

"And other eyes than ours
Here made to look on flowers,
Eyes of small birds, and insects small :
The deep sun-blushing rose
Round which the prickles close
Opens her bosom to them all.
The tiniest living thing
That soars on feathered wing,
Or crawls among the long grass out of sight,
Has just as good a right
To its appointed portion of delight
As any king."

One of Christina Rossetti's most perfect short poems is "A Green Cornfield," which being short may be quoted :—

"The earth was green, the sky was blue ;
I saw and heard one sunny morn
A skylark hang between the two,
A singing speck above the corn.
"A stage below in glad accord,
White butterflies danced on the wing,
And still the singing skylark soared
And silent sank and soared to sing.
"The cornfield stretched a tender green
To right and left beside my walks ;
I knew he had a nest unseen
Somewhere among the million stalks.
"And as I paused to hear his song
While swift the sunny moments slid,
Perhaps his mate sat listening long,
And listened longer than I did."

"Child's Talk in April"—talk that has charmed many a staid adult as the wren chatters on—is too well known to need quotation at length :—

"We'd have our change of hopes and fears,
Small quarrels, reconcilements sweet,
I'd perch by you to chirp and cheer
Or hop about on active feet
And fetch you dainty bits to eat," &c.

Very numerous are the references in the poems to the redbreast, which was evidently a favourite bird. In the opening of "The First Spring Day" there is a charming one:—

"I wonder if the sap is stirring yet,
If wintry birds are dreaming of a mate,
If frozen snowdrops feel as yet the sun,
And crocus fires are kindling one by one:
Sing, robin, sing;
I still am sore in doubt concerning Spring."

In "The Keynote" ("A Pageant and other Poems") the second verse runs thus:—

"Yet Robin sings through Winter's rest,
When bushes put their berries on;
While they their ruddy jewels don,
He sings out of a ruddy breast;
The hips and haws and ruddy breast
Make one spot warm where snowflakes lie,
They break and cheer the unlovely rest
Of Winter's pause—and why not I?"

This little paper may be appropriately concluded by a paragraph from Mr. Mackenzie Bell's biography, where is told an incident which occurred at Hastings, related by Christina Rossetti in "Time Flies." "She there says how, when one of a luncheon party, she heard a General who was present relate that, when returning from shooting one day, he observed 'a speck in the sky.' Taking it for a wandering bird he aimed at it his last random shot, but he felt no surprise at no result following when he remembered the considerable distance between him and the object. The General had at home a robin —originally wild and still allowed to go at large—a bird that had acquired a certain degree of tameness through the kindness shown to it. To this 'free, familiar, bird' the General was greatly attached, but it 'never came again' after the day just mentioned, and ever afterwards he was of opinion that, on the occasion referred to, he had himself unwittingly shot it, and when he told the anecdote he was unable to do so without emotion.

"This is Christina's comment: 'Let us have mercy on each other and forgive: even a wronged robin's silence and absence were hard to bear.'"

HELEN J. ORMEROD.

Squirrels ?—I should be very grateful if, in next month's NATURE NOTES, you, or any of your readers, would inform me as to a phenomenon which we have observed in Suffolk this last winter, viz., the evident biting off by some animal of the shoots of the spruce fir. Hundreds of shoots may be seen lying under some trees. I have heard it is supposed to be the work of some beetle or other. I should be very glad to know if there is any remedy for this. M. B.

COMMON LIFE IN SPRING.*

OF all spots the common, in my opinion, contains the greatest variety of life, and especially bird-life. The various kinds of trees and shrubs which are just bursting into leaf prove naturally great attractions to birds and cannot fail to arouse the interest of even the most casual observer.

Strolling carelessly across the sward, which readily yields to your tread, you enter a large clump of trees, chiefly composed of oaks, although here and there interspersed with compact hawthorn bushes, just beginning to be clothed in a mass of white bloom. But listen! A long, low whistle greets your ears, and before you can decide from what bird it proceeds, a burst of exquisite melody follows, which brings a hundred pleasant recollections to your mind, for in this song you recognise that sweetest of our songsters, the nightingale. Perhaps he (for the cocks precede the hens) has arrived only the night before; but in that clump of bushes he will continue to sing for about a month, that is, until the pressing duty of providing for the nestlings demands all his attention, when his song will practically cease.

All the while you have been listening to the enchanting soloist, a squirrel has been busy at the foot of yon oak tree, collecting materials wherewith to complete his nursery. You advance a step and the little animal sits up and listens. On catching sight of you he wastes no time in deliberation, but scrambles up the tree, taking care to keep the trunk between himself and you. Knowing, as you do, that all the while he is mounting the trunk, you watch for his reappearance, and are rewarded by seeing him appear between the first forks about thirty feet from the ground. A moment later he mounts yet higher, scurries along a thick branch, leaps into a yew tree, and with an angry bark buries himself in his drey.

On emerging from the clump of trees you come to an open piece of ground completely surrounded by bushes. Your appearance creates quite a disturbance, as the many tumps of grass were crowned with numerous bunnies which, like the squirrel, resenting your intrusion, seek safety in their holes, their white tails alone being visible as they pause for a moment to listen. On crossing this little patch you enter once more into the copse on the further side, and the first thing that greets you is the loud tap-tap of the woodpecker. After a short survey you see the handsome bird with his head far back, and then an impatient tap follows, loosening the bark, which falls with a faint sound on to the dead leaves below. You leave him busy at his

* [We have much pleasure in printing this sketch of a Surrey common from the pen of one who describes himself as "only a schoolboy."—Ed. *N.N.*]

work—or rather play—and walk along for a few yards ; but you are not kept uninterested for long, as your eye soon catches sight of a little brown object which at first you take for a squirrel, but which, as it emerges from the undergrowth, you see to be a stoat—perhaps on the scent of one of the hapless rabbits, which you a moment before left in safety. I would speak a word in defence of the stoat. It destroys countless mice during its life, which would otherwise do much harm to the crops, and it is only occasionally that it really takes to poaching. Of course in covers and other preserved places it is well known that its faults outnumber its merits ; but I think that it might at least be allowed to live unmolested in the open tracts of country, where its food chiefly exists.

The common is frequently used by the people in the district as a place whereon to browse their sheep and goats, and the sight of these, as they wander in a semi-wild state among the trees, or lie down under the hawthorn bushes, greatly adds to the beauty of such spots. At this time of the year they are accompanied by their young, and from all appearances the kind of life suits the ewes, as two lambs seem to fall to the share of each mother. As you stand and look through the trees at a little cottage on the outskirts, with its orchard a mass of exquisite pink blossom, the soft coo of the ringdove or cushat is borne along by the evening breeze, and you can picture the loving father-bird soothing his mate in some distant pollard tree. In direct antithesis to this you hear the discordant cries of several jays as they fly from tree to tree, no doubt engaged in the choice of their future mates.

But besides all these birds and animals which in a measure attract our attention, there are many silent tenants who pass their lives unnoted by the majority of men. Foremost among these is the busy family of tit-mice, which pursues its incessant search for insects in the many trees which compose its home, now thoroughly examining a part of the trunk, now taking a dainty little flight to one of the twigs and hanging on, may-be head downwards, pecking out the grubs and other insects from the buds. Again there is the little tree-creeper which assiduously visits the trunks of numberless trees, ascending or descending them in a spiral manner, and apparently wholly engrossed in its business. Many people go through woods and copses and yet never see a mouse, and express surprise at your meeting them at every turn. These, I am sorry to say, are the general kind of people nowadays : they do not keep their eyes open : to them nature possesses no charms : they go a walk because it gives them something to do, or because others do ; but were you to ask them what they saw, they would say that there was nothing about to see. We may feel confident that wherever we go, in the country or in the town, there will be something to set us thinking—if we will but think—of the mighty problem which Nature has given us to solve.

Fylton Rectory, near Bristol. A. C. Mackie.

BIRD-PROTECTION.

Audubon Societies in the United States.—Whilst we have received for review the two sumptuous volumes on Audubon (*Audubon and his Journals*, by Maria R. Audubon, 2 vols., John C. Nimmo) just published, of which a notice will appear in our next number, we note with pleasure that the establishment of the Massachusetts Audubon Society, in January, 1896, for the protection of birds, has been followed by the formation of similar bodies in no less than thirteen of the other United States. Their main purpose is "to discourage buying and wearing for ornamental purposes the feathers of any wild bird," and one method they propose to adopt is to establish a "Bird Day" in public schools, so as to enlist the interest of the children.

Protective Legislation.—The efforts of the friends of birds in America have already had a definite result. A Bill has recently been passed by the Massachusetts States Legislature, prohibiting the wearing of song and insectivorous birds on women's hats; and the city of Boston is vigorously enforcing the law. A petition, framed by Senator Hoar, on behalf and in the name of the birds, is said to have been instrumental in the passing of this law. In illustration of the extent of the demands of a cruel and barbarous fashion in woman's dress, one of the officials of the Boston Natural History Museum has compiled a list of birds which he saw adorning (?) women's headgear, in which forty species were represented.

A Protest from "Ouida."—In a manifesto addressed to the Dames of the Primrose League by "Ouida," is the following strongly-worded protest:—

"Your beloved royalties condone such destruction, and deck themselves with humming-bird, paradise-bird and tuft of egret, and you cannot of course pretend to be more tender of soul than your superiors. If you did not adorn yourselves also with murdered birds, you might actually look as if you had the impertinence to give royalty a rebuke—forbid it heaven! Ah, no! Content yourselves with rebuking a hedger and ditcher for his sin in owning a dog, or with collaring a small boy in his crime of pocketing a partridge's egg; but never run the risk of even passively, or by mere example, appearing to censure those cherished personages with whom you dine at Balmoral, lunch at Sandringham, and catch cold at Windsor."

Grebes.—Fashion has once more laid deadly toll on these very beautiful and ornamental birds, and filled the milliners' windows with hundreds of thousands of their silky white breasts. To supply this demand what slaughter of grebes there must have been in North America, Northern Scandinavia, Russia and Iceland; and I fear to think the grebes of our own meres and broads have also been sacrificed to the cruel goddess. If

so, then during the coming summer we shall miss the great crested grebe and the little grebe, the "greatest ornithological ornaments" of our inland waters (as they have been so truly called), from their accustomed haunts where we have watched them and their young, and their interesting nesting habits, in former years, with such pleasure and admiration. I would therefore appeal to all our owners of inland lakes or streams where the grebes are still to be found, to extend a protecting arm to such of these interesting and beautiful birds as are left, and to see that no loafing gunner or depredating egg-collector persecutes them. And to bird lovers and County Councillors of those counties which have not already included the grebes and their eggs in their Wild Bird Protection Orders (which it is now in their power to do), I would also appeal to take steps at once to give full protection to all species of grebes and their eggs during the coming breeding season. If any of our readers can, in the next number of NATURE NOTES, give accurate information as to where and in what numbers the present supply of grebe skins has been obtained, it would be most useful to those of us who are interested in Wild Bird Protection.

J. R. B. M.

ANNUAL REPORT OF THE SOCIETY FOR THE PROTECTION OF BIRDS.—At the annual meeting of this Society, held on February 25, a report was presented containing the following passage:—

"It is with sorrow and shame that we have to confess that the fashion of using the plumage of birds for millinery purposes continues unabated; that, in fact, it has in 1897 assumed greater proportions than ever. This can be fully evidenced by studying the catalogues of the firms who sell the freshly imported birds' skins and feathers by public auction. For the Kingdom of Great Britain the year 1897 has been one of jubilation, but for the bird kingdom a record year of pillage, devastation, and unmerciful destruction. The recuperative powers which birds possess are of no avail against this excessive drain on their numbers. If birds and their allies prove incapable of resisting such remorseless foes, the present generation of mankind will have to bear the everlasting odium of having blotted out of existence some of the loveliest of created beings. And not this only, but of having done so often by barbarously cruel means, such as inflicting on sentient creatures, high in the scale of animal life, the horrors of a slow and painful death; for in this pursuit parent birds of some species are shot in the act of feeding their young, and the tender nestlings are consequently left to die of starvation. Mr. G. F. Watts, R.A., who has recently become an associate of this Society, is now painting a picture, representing an angel, with bowed head and despairing figure, bending over a marble tomb covered with birds' wings, while a spirit of evil grins below. This conception may safely be said to forcibly represent the feeling of the Society with

regard to the trade in birds' feathers; and we believe that this sentiment will be echoed by the Selborne Society and other kindred associations who, with ourselves, are fighting the same uphill battle." The Chairman, in moving the adoption of the report, said a consolidation of the Acts with reference to wild birds was urgently needed. Mr. Edward Giffard, who seconded, said he believed many men would not choose for a wife a lady who wore the plumage of slaughtered birds, while many ladies would regard with dislike a man who ate larks and other singing birds. A letter from Mr. Alfred Austin, the Poet Laureate, was read, in which the following passage occurred:—"The greatest stigma on the fair land of Italy, from which I write, is the perpetual harassing and slaughtering of birds by the entire populace. Hence, their groves too often want that crowning sylvan charm—wood notes wild." Mrs. Edward Phillips said the fashion of wearing aigrettes still continued to a distressing extent, especially in Court circles. She thought an appeal ought to be made to the Queen on this subject. Her Majesty was a great lover of animal and bird life, and had a most tender heart. If her attention was drawn to the cruel method by which these feathers were obtained, it was quite possible that she would discountenance the wearing of them. This would render the custom unfashionable, and render a great service to the cause they had at heart.

Mr. Watts's Picture.—With reference to the picture referred to in the above report, Mrs. Hubbard writes to us from Kew (March 7):—

"Of this picture a reproduction is now given in No. 28 of the pamphlets published by the Society; and I feel it would be an impertinence in me to speak of the impressiveness of the design — of the bright pathetic plumage, of the shuddering horror of the angel. As to the lower half of the picture I am more competent to speak. It is no tomb that the angel is bending over. It is an altar, the altar of Fashion, on which the lives of the birds have been sacrificed. And it is no 'spirit of evil' that is represented on the plinth of the altar. In that flimsy face and figure is no demoniac power: no force is there equal to rise even to malignity: gesture and countenance are alike trivial. But, by that shrug and grimace, that would-be elegant contortion, did not our great artist mean something far more scathing than the representation of a mere abstract 'spirit of evil' would be? Surely the interpretation is clear. In this figure Mr. Watts has dared to give us a fashionable lady—a real 'feathered woman' (*Homo sapiens*, *var. plumigera*, Hudson) plucked—would that I could say finally plucked!"

Lady-birds in Winter Quarters.—While gathering early blossoms of gorse to-day (January 23), I found, on more than one bush, a number of lady-birds half concealed in the empty seed-pods of last year.

Essendon, Hatfield, Herts. Adelaide E. Grignon.

NATURE-KNOWLEDGE.

A LOVE of Nature which is worthy of the name will inevitably lead to a desire for a fuller and deeper knowledge of Nature, so that I have not been at all surprised at receiving various letters urging the insertion of more directly instructive articles in NATURE NOTES. I hope in the immediate future to respond to these suggestions in what I believe to be the best way, by giving complete life-histories, by various writers, of various types of plant and animal life. Meanwhile, however, so many of our members are interested in the work of our primary schools that no apology is, I think, needed from me for quoting at length from his presidential address on "The Training in the Elementary School, with especial reference to the Over-crowding of the Time Table," which I have received by the kindness of Mr. W. Johnson, of the West Lambeth Teachers' Association.

"Nowadays," he says, "we have before us some capital schemes of elementary physics and chemistry. Probably most teachers would choose to take one of these. But in country schools, at least, I should much prefer to see adopted a department, or a combination of studies from several departments, of what may be called from want of any other name, 'Nature-knowledge.' Such a course might embrace the observation and explanation of familiar physical phenomena, of plant life and the operations of the fields, of the neighbouring rocks, soil, springs, &c., together with easy lessons on the common trees, birds, insects and flowers, or the face of the sky by day and night, on the laws of health as concerned with the cottage, and so forth.

"Some of you will say, 'Well, this is distinctly good; you started by complaining of the multiplication of subjects, and now you propose to teach geology, botany, astronomy, and who knows what else?' I would answer that the topics suggested should be allowed to comprehend object lessons and class and specific subjects under one scheme. Again, the course would be spread over several years. Nor need the teacher try to take all the subjects alluded to, certainly not the respective sciences as such, unless indeed one only were taken. I claim that the course has practical as well as educational merit. Some of the pioneers of education—the Gills, the Robinses, and the Webbs—proved what could be done in this field. The fact not to be lost sight of, if you will pardon the well-worn sermon, is that the child has familiar surroundings which to him are all in all. It is through these homely matters that we can cultivate the habit of swift, correct, and comprehensive observation. Then, by utilising the composition lesson, we can teach him to express in correct English what he sees and infers. To give him the open ear, 'the seeing eye and the understanding heart' is surely better than to make him acquainted with some science only remotely connected with his daily experience. Please do not conclude that I place trust in a mere bundle of facts. Probably we already teach too many. There is sober truth in the maxim put into the mouth of Sherlock Holmes that there comes a time when for every fact driven into the memory an old one is knocked out. Hence we must make the load light at first. 'Education,' says Mr. Frederic Harrison, 'can open to the learner the door into the vestibule of the World's Wisdom, but it cannot cram its contents into his brain.' Be the child's memory as retentive as you will, in the after-time much will be lost. Consequently, particulars should be so carefully selected that simply by the daily, monthly, or yearly recurrence of the phenomena, the youth is compelled to use that surest aid to the memory, the continual revolving in the mind of known facts, and the constant re-testing, revising, and extending of those facts.

"I feel very hopeful on the teaching of 'Nature-knowledge,' for is it not true that some of the most intelligent country people one has ever known, are those who have learnt to take the closest interest in Nature and her ways?

Without introducing controversial matters, may I express my belief that a well-considered scheme of Nature lessons, looming large on the school time-table, would tend more to keep the people in the villages than any other remedy. Truer words were never spoken than those uttered by Mr. Macnamara at the Rural Teachers' Conference on New Year's Day, 1897 (when I have used similar language some of my friends considered me a trifler) :—

"'Give the agricultural labourer a thoroughly wise and generous education, invest him with the faculty of trained observation and the ability to think, teach him to *perceive* as well as to *see*, to *interpret* as well as to *hear*, and you have gone a long way towards keeping him upon the land, and contentedly upon the land.' Need it be added that it is in the primary school where this task can be done? Much of the work done in the special classes inaugurated by the Technical Education and University Extension Committees is unsuitable for the labourer and his family. We hear of botanical lectures which are admirably fitted to the needs of the experienced gardener, and of cookery lectures which would be best appreciated by the occupants of the squire's kitchen. Such teaching is useless to the working-man and his children. The path must be first prepared by the people trained for that purpose.

"You will perhaps now say, 'Very good; but could such a course as the one indicated be carried out in town schools?' 'Yes' and 'No.' No, obviously, because the surroundings are not suitable to the same extent. Yes, because many children in a district like S.W. London get into the country sometimes—may the opportunities increase! So that, if far-sighted managers would supply abundance of pictures and specimens, the teacher has the means of leading the scholars to identify, and afterwards to examine and ponder over what they may see. And, believe me, it is no jest when one points to the great possibilities of our parks and commons, inexpressibly artificial as they are,—considered as reference libraries of natural history. Most of these places contain good specimens of English shrubs and trees (there are some thirty on or near Clapham Common), whilst Battersea Park contains one of the finest wild bird sanctuaries either in or immediately near London. Should the L.C.C. adopt Mr. Organ's suggestion of laying out flower-beds especially for schools, our open spaces would be still more useful. The Government Code now allows visits to Museums and Picture Galleries 'to count towards the time required for an attendance at school.' What splendid treasures are stored up in these palaces few people dream, but until more subsidiary museums and galleries are established, the majority of teachers will be rarely able to use this method of instruction. It would not cost a relatively large sum to form branch museums with specimens which could be circulated from district to district. Under any circumstances, let us teach the child something of *his* little world, even if we occasionally neglect wearisome lessons on countries which mayhap he will never visit. Let him know a little, even a little, of the things under his feet and over his head. Let us have less of the science book and more of that open book in which he 'who runs may read.' This study gives the scholar resources within himself, and even on the dullest day of December, supplies thoughts which 'flash upon the inward eye which is the bliss of solitude.' In the development of kindlier sympathies and more humane conduct, in the cultivation of a love of natural beauty, the country would receive back a hundredfold. Fancy a Bank Holiday on which no birds' nests were destroyed, no squirrels stoned to death, no armfuls of wild flowers torn up and flung aside by the loafers and larrikins whose school career has been sadly too brief.

"It is still open for someone to doubt whether a scheme of Nature-knowledge is not out of place in town schools. Well, now, take an actual list of lessons from the junior syllabus followed in the schools, urban and rural, of the German state of Saxe-Weimar. I quote from the excellent *Schoolmaster* summaries of Mr. Sadler's *First Book of Reports*. The lessons follow roughly the course of the year. Here are a few of the titles :—The time of day. The swallow. Observations on the form and position of the sun at different times. Observations on the foliage of the lime, lilac, and oak trees. The garden beds, flowers, weeds, &c. Rain. The rainbow. A farmhouse. The goat. Migration of swallows. Why one begins to see his own breath. The frequence of fogs. Observations on the decrease of day and the increase of night. A frozen window-glass. Snow-flakes, &c.

"Commonplace matters, but matters brimful of interest! The advocates of

this kind of teaching can afford to disregard the argument, 'Oh, but consider the training to be obtained by sound teaching in grammar, algebra, French or Latin.' This is quite true, but there is also excellent training in a course of Nature-lessons, and there is the further advantage that the spirit of enquiry thus aroused is likely to grow. The interest evoked will not be left behind at the close of school-life, but will survive, as instances frequently prove, after other enthusiasms have been quenched by suffering or sorrow.

"For myself, I had always a sneaking fondness for those old-world schoolmasters who would sometimes say, 'Boys, if you work well this morning, you shall go to see the foxhounds throw off this afternoon,' or 'We will take some lunch and spend to-morrow in the woods.' The former promise would now be precluded on humanitarian grounds, and both promises because their fulfilment would mean breaking the time-table. To be quite serious—those days are gone, and with them some of the free-and-easy doings, fortunately. But if we have profited by the capitalised experience of the past, we have learnt that every reasonable extension of liberty has called forth an honest response from the teacher. One further concession I should like to see, viz., that at least one blank space should be left on the time-table to be filled up at the discretion of the class teacher, so that the man with a speciality might let his pupils receive the benefit. If anyone doubts the wisdom of such a privilege, let him turn again to Mr. Sadler's Reports (*Schoolmaster*, September 25, 1897). He will find that something of this spirit exists in many German schools. 'While in the school buildings they (the teachers) must adhere to the time-table; but if the lesson can be better given in the country, or in a museum, they give it there, and are not limited to time.' Thus, we find that scholars make journeys through the streets of the town, with note-books, tape-measures, and measuring-chains. Sketches are made, lengths taken, plans drawn. In addition, country excursions of a few days' duration are common. The children at first march in groups, singing national songs as they go. Occasionally, they disperse to make notes or drawings, or to gather specimens for examination. A district is 'chosen on account of its historical associations, the geographical illustrations it furnishes, the richness and variety of plant and animal life to be studied, and the opportunities for constant pauses to examine places of interest.' I now quote the opening words of an article written by Miss C. Dodd in the *National Review* for November, 1897—it was written after an actual excursion: 'The German schoolmaster believes Wordsworth's sentiment—

"'"Come forth into the light of things,
Let Nature be your teacher—"

and he takes his pupils with him into the woods, the meadows, and on to the mountains. Together they watch the early buds of spring and the yellowing leaves of autumn. They see the planting of the seeds and the gathering in of the harvest. They trace the winding of the river, and the formation of the valley. They visit the churches, and observe the style of the doors, windows, and towers. They see the sheep-shearing, and later they visit the factory and watch the wool spun into thread and woven into cloth.'

"Mark the results. They may be summed up in two isolated statements made by Mr. George Wheeldon, of Boro' Road College, as given in the *Book of Reports*. (1) 'The number of facts taught to the German boy concerning the geography of the world compared with those taught to the English boy is between one-sixth and one-eighth.' (2) 'If a German and an English boy of the Sixth Standard were sent out together for an hour's walk, it is no exaggeration to say that the German would know five times as much as the English boy, and would also be able to say what he knew much better than the English boy.'"

Almost by the same post as Mr. Johnson's address I received from Messrs. Macmillan an excellent little work,* which if it were not unfortunately written expressly for American schools, would be just the very thing to put into the hands of every country school teacher. It comprises an outline course of lessons, extending from September to June inclusive, for the first

* *Nature Study in Elementary Schools: a Manual for Teachers.* By Mrs. Wilson, Ph.D., New York. (The Macmillan Co., 1897, 8vo.)

four years of school life, on the weather, plants, animals and stones, with references to poetry, classical weather-myths, and books containing more detail, all put before the teacher in the most practical form possible. I wish we had a similar book for our English schools. THE EDITOR.

REVIEWS AND EXCHANGES.

A Sketch of the Natural History (Vertebrates) of the British Islands. By F. G. Aflalo, F.R.G.S., F.Z.S. (Blackwoods), 8vo., 6s. nett.

Our space does not permit us to say much at present about this excellently planned work. As the author says in his preface, there is up to the present no single volume on the subject, and our local secretaries who have branch libraries will find this an indispensable work for their shelves. We expect to refer to it almost daily. It includes lists of our mammals, birds, reptiles, amphibians, and fish with their scientific names; a map, four full-page illustrations, and seventy smaller ones, mostly excellent, and many of them from the pencil of Mr. G. E. Lodge; a bibliography, and a list of local natural history societies. Altogether we feel much indebted to Mr. Aflalo and Messrs. Blackwood for this work. We notice with some surprise that, though the author refers to Mr. E. N. Buxton's "Epping Forest," he does not mention the distinct race of fallow-deer or the introduced roe-deer and badgers of that woodland.

The Naturalist's Directory, 1898 (Upcott Gill) 8vo., 1s.

Though inevitably containing many errors of omission and misprinting, this useful directory, now in its fourth year, is a distinct improvement upon its predecessors and well worth its modest price.

The Animals' Friend for March is an excellent number of our esteemed contemporary. A short article on the nut-hatch is charmingly illustrated from a photograph, and Miss Carrington's *Children's Supplement* contains an impressive letter on gold-fish in globes and some pretty verses on the horse.

In *Knowledge* for March, Mr. Vaughan Jennings continues his "Botanical Studies" with an illustrated article on *Coleochæte*; the Rev. T. R. R. Stebbing continues "The Karkinokosm, or World of Crustacea;" and Mr. Enock begins a series of articles on "British Bees."

NATURAL HISTORY NOTES AND QUERIES.

Hornets, Wasps and Bees.—One sunny morning in the autumn, as I was watching a number of wasps and bees on a patch of thyme, a hornet appeared on the scene, and at once attempted to secure a dinner by trying to seize them with its legs as they were engaged in rifling a flower—much in the same way as a wasp treats a fly. After one or two onslaughts the wasps disappeared; not so the bees, which went away as they were pounced upon one by one. The behaviour of the bees in the presence of their arch enemy was curious. There was no attempt at resistance or combination to drive off the intruder, but when knocked over by the hornet, a fussy exhibition of fear and precipitate flight. When all had been driven away the hornet settled down on a leaf to await their return, and, by the movements of its antennæ and quivering of its body, clearly showed its excitement when its prey came near. But all to no purpose, and, failing to secure a meal, the hornet flew away. EDMUND THOS. DAUBENY.

Hornets, Cockchafers, &c.—In NATURE NOTES for January, and also in the February number, there is some interesting information about hornets. Will some correspondent kindly tell me something of their prevalence in different parts of England? I will state briefly my own experience. The early part of my life was spent on a farm in Norfolk. Hornets were certainly common there, and

more than one of the family knew by experience what their sting was like. Several years later, between 1860 and 1870, I was living in the north-west of Worcestershire. In one year I heard of three nests within a short distance of St. Michael's College, in which I was a master. They were frequently found in the College. I knocked one down once, and it fell on my pillow. For the last twenty-eight years I have lived in Kent, and here have never seen a hornet, or heard of a nest.

One evening last summer I saw a bird hawking and catching cockchafers. Personally, I have no doubt the bird was a skylark. I admit that the *Field* suggested that it must have been a starling; but having lived all my life in the country I venture to say that I do know a lark from a starling, whether flying or running, and I saw this bird in both positions. On the same grounds I am quite confident that it was not a shrike.

Hawfinches are reported this week (February 13-19) in more than one county. I saw one close to my own house. It remains to be seen whether they are harbingers of hard weather.

Otham Parsonage, Maidstone. F. M. MILLARD.

Hawfinches.—Two hawfinches are still frequenting this garden, well into the month of March. It is not at all the first time that they have been seen here; but, so far as I have observed, it is the second time that they have been seen in the garden, day after day, for weeks together. The first year of their doing so was, I should think, not less than twenty years ago. Then, as this year, they were first seen (I am almost sure) in February. Perhaps some other correspondent will give the result of his observations of them. February seems a somewhat singular month for their arrival. They hardly seem quite so shy as they are sometimes said to be. At any rate, they show a certain dogged pertinacity in coming to two holly-trees near our front gate, close to the road, and—even more often—to the gravel drive on which several berries have fallen. One day, as I came in at this gate, a hawfinch flew just over my head: he passed the holly-trees, but lighted on a small walnut-tree (of course bare of leaves at this time) close by. A missel-thrush—and they also come to these hollies—would hardly have come or stayed so near. When they fly by on a sunny day, they look very handsome with the rich brown purple contrasting with the white on the wings and tail. On the ground I should think no English bird is less springy or sprightly: their short laborious hop seems like what Joe, the fat boy, might achieve if he were set to jump in a sack. I should say that they also resemble him in the healthy vigour of their appetites. I have not myself seen them in the summer; but I think they have been shot in cherry orchards.

F. M. MILLARD.

During the months of December, January, and part of February, I have had in my garden a good specimen of the "Coccothraustes vulgaris," or grosbeak hawfinch. He consorted with chaffinches and others of the Fringillinæ common in our garden in winter. I have never seen one of these birds in this part of England before.

Weston Lea, near Bath. CHARLES GAINE.

NEWS FROM THE BRANCHES.

Bath.—On Feb. 28 a lecture was given by Mr. E. A. Martin, F.G.S., at the Museum, entitled "A Countryside Ramble." The lecture was illustrated by the lantern under the able manipulation of Mr. E. J. Appleby.

Brighton.—On February 1, Mr. E. A. Martin, F.G.S., gave a Selbornian address to the children of St. Peter's Schools, on the invitation of the Rev. Douglas Secretan.

Clapton.—At the Social Meeting held at Upland College, Stoke Newington, on February 5, Mr. Ferdinand Coles gave a very instructive lecture on "Mosses," which he illustrated with a large number of most interesting specimens. On Saturday, March 5, the Annual General Meeting was held, at which the report for the year was presented, showing a balance in hand of £3 18s. 5d. All the officers of the Branch were re-elected. Mr. R. Marshman Wattson, at the

expressed wish of the meeting, undertook to continue to act as hon. sec. The business meeting was followed by a Social Microscopical Evening.

Croydon and Norwood.—An enthusiastic audience assembled at the Thornton Heath Polytechnic on Feb. 5 to listen to an admirable lecture which was delivered by Mr. E. J. Davies on "Health and Fashion." On the proposition of Dr. Thos. Jackson, J.P., a vote of thanks was accorded to the lecturer.

Ealing.—A lecture was given at St. John's Schools, Glenthorne Road, Hammersmith, on February 21, by Mr. T. A. Dymes, the subject of the lecture being "How Plants Fight the Battle of Life."

SELBORNE SOCIETY NOTICES.

Annual Meeting and Conversazione.—The date of the Annual Meeting and Conversazione has been fixed for Monday, May 23, 1898, from 7.30 to 10.30. The meeting will commence at 8 o'clock. The Hon. Sec. of the Conversazione Committee will be glad to receive offers of exhibits, photographs, music, &c., as soon as possible.

Notice of Motion.—Mr. R. Marshman Wattson has given notice that he will move the following resolution at the Annual Meeting on May 23:—"That the contribution from Branches shall in future be 1s. on each member paying 5s. and upwards, and 3d. on each member paying 2s. 6d."

Selborne Library.—The Librarian acknowledges with thanks the following additions to the Library:—"The Migration of Birds," by Chas. Dixon; "Bird Life," by Dr. A. E. Brehm; "Extinct British Animals," by Harting; "The Birds of Sherwood Forest," by Sterland; "Ueber die Zugstrassen der Vögel," by J. A. Palmén, from the Library of the late Prebendary Gordon, per Miss A. Martelli; "A Literal Translation of the Astronomy and Meteorology of Aratus," with some bibliographical remarks, by C. Leeson Prince; "Observations upon the Topography and Climate of Crowborough Hill, Sussex," together with other subjects of collateral interest, by C. Leeson Prince, from the author.

The following donation towards the DEFICIT FUND has been received:—Capt. Vipan, £1.

Council and Committee Meetings.—The next meetings of the Council will be held on April 5 and May 3 at 5.30; of the Magazine and Leaflet Committee on April 19 and May 17 at 5.30; of the Conversazione Committee on April 5, after the Council Meeting.

ANSWERS TO CORRESPONDENTS.

E. E.—There is no complete flora of Kent or Sussex. One of Kent is in preparation. The late Mr. Roper's *Flora of Eastbourne* is excellent as far as it goes. Brewer's *Flora of Surrey* is out of date, but can often be obtained second-hand. There is a small *Flora of South-west Surrey*, by Mr. S. T. Dunn, published by Messrs. West, Newman & Co. Perhaps De Crespigny's *New London Flora*, also obtainable second-hand, may be of use to you.

A Reader.—The causes of variation in form and colour in moths and other organisms constitute a very wide and difficult subject which we are unable to deal with at present.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 34, Argyll Mansions, Addison Bridge, London, W.; letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W.

Nature Notes:
The Selborne Society's Magazine.

No. 101. MAY, 1898. Vol. IX.

THE ALTAR OF FASHION.

A Picture by G. F. Watts, R.A.*

With wine and oil, while clouds of incense rolled
From unoffending altar-stones, of yore
Men sought the Eternal Father, gave their store,
Fruit of the field, or gem, or gleaming gold;
Now to grim Fashion's folly manifold
—Fashion the changeful goddess—do they pour
The pain and pity of bright wings that bore
Hearts to the light in darker days of old.

Thou sorrowing angel, longer with us stay!
These sin but know not;—thoughtless, deaf and blind,
They have not heard this murder cry to heaven;
To clothe pride's utter nakedness they slay
The innocent life, rob earth of glory given,
And mar the revelation of God's mind.

H. D. Rawnsley.

* See p. 74.

SELBORNIANA.

Annual Meeting and Conversazione.—The conversazione will take place, as previously announced, on Monday, May 23, from 7.30 to 10.30 at the Society's rooms, 20, Hanover Square, W. The meeting will commence at 8. Sir John Lubbock will give the Presidential Address and will be supported by the Hon. Mrs. R. C. Boyle, Professor G. S. Boulger, Dr. Longstaff, Hon. J. Scott Montagu and others. After the meeting, lantern slides illustrating bird life will be shown, under the supervision of Mr. H. W. Ravenshaw. There will also be an exhibition of drawings, microscopic objects, curios, &c., and during the evening short addresses will be given on "Aquatic Insects," "Selborne," and other subjects.

A ticket of admission is sent with each copy of Nature Notes this month to all members of the Selborne Society. It is particularly requested that those intending to be present will fill in their names in the blank space provided for the purpose, and also that Honorary Secretaries of Branches who attend will take steps to make themselves known to the Secretary or members of the Council.

Botany in London Parks.—A joint committee of the Parks and Open Spaces Committee and the Technical Education Board of the London County Council has been considering the practicability of laying out plots of ground in certain of the London parks in such a manner as will afford assistance to scholars at elementary and secondary schools in the study of practical botany. Reports have been presented to the committee on the educational side of the question by Dr. Garnett and Dr. Kimmins. The following suggestions were contained in these reports :—(1) That a very valuable experiment could be conducted on a scale sufficiently wide if, in each of three parks, about twenty rods of ground were devoted to the cultivation for school purposes of hardy typical plants belonging to twenty natural orders. (2) The beds should be arranged near the paths, one bed being devoted to each order. They should differ in size, the largest being a little under 500 square feet, and the smallest about 100 square feet in area, so that the average of the twenty beds would be approximately one rod. (3) The specimens selected should be such as are suitable for growth, and each should be labelled with its common name and its Latin, or systematic name. (4) Labels giving the names and natural orders should be attached to the more important trees, shrubs, and plants throughout the parks selected. (5) A botanical guide to the parks selected should be published under the superintendence of the Technical Education Board and the Parks Committee jointly. (6) Teachers holding printed orders from the Technical Education Board should be able to obtain from the

superintendent in each park such specimens as might be required for botanical study in the schools, so far as they could be applied without detriment to the specimens. In a report upon the matter the Parks and Open Spaces Committee adopt these suggestions, and, putting them in the form of recommendations, will shortly submit them to the County Council for approval. They point out that some further suggestions were made, but they thought it would be better in the first instance to deal with the subject quite in the sense of an experiment, and if, later on, it should prove to be resulting advantageously to the schools, possibly the arrangements might be extended to the cultivation of important types of the lower orders of plants such as fungi, mosses, ferns, &c., and facilities might be afforded for the study of aquatic plants. The chief officer of the Parks Department reported that the proposed arrangements were quite practicable at any of the larger parks, but that some expenditure would be necessary. Upon that point the chief officer had been instructed to submit a report. It is proposed that the experimental beds shall be formed at Battersea Park, Ravenscourt Park, and Finsbury Park.

Insanity in Lancashire.—The following appears in the *Daily Telegraph* of March 25:—

"The Farmer's Pests.

"A conference of a unique character has just been held at Kirkhome, in Lancashire, at which representatives of numerous townships reported upon the destruction of moles and birds during the year. The rate of payment is a penny for two old birds, the same sum for four young ones, and a like amount for eight eggs, each parish levying a voluntary rate per acre. In Treales parish the birds and eggs destroyed numbered nearly 15,000. Several parishes devote their entire energies to the capturing of moles, and in Marton an expert catcher has been engaged for the next seven years. The conference decided to continue this method of exterminating farm pests."

Progress on the Continent.—We have received from Trieste the publications of the Austrian League for the Protection of Birds, established in 1896, with its head-quarters at Gratz, under the presidency of Anna, Countess Buttler (*née* Countess Stubenberg). Among these is an 'Appeal to Ladies,' in which it is stated that in the wholesale slaughter of birds of passage that "has been in progress for the last thirty years, England alone consumes twenty-five million bird-corpses yearly, and the whole world of fashion quite two hundred millions, so that in a few decades more than two thousand millions of birds have been sacrificed." . . . . "The farmer," the pamphlet continues, "notices the absence of bird life. The insects are getting the upper hand, and it is clear that if this bird-massacre continues agriculture will suffer severely, and our national wealth receive a serious blow." A similar league has been widely spread in Germany, and in Finland there were 11,000 ladies in 1895 who were pledged to wear neither the feathers nor the bodies

of birds on their hats and bonnets. An International Congress on the Protection of Wild Animals and Birds is to be held at Gratz from August 5 to 9.

Want of Birds in Japan.—A correspondent sends us the following letter from the *Japan Weekly Times*, signed "An English Bird Lover":—

"Sir,—I have often noticed in your columns, and again in your issue of the 21st inst., the great damage done in this country to both crops and fruit trees by insects. If the Japanese would but see it, the remedy is in their own hands. A few years ago one of our most famous naturalists was spending a few months in this country and specially noticing the scarcity of small birds, he observed that a plague of insects was the inevitable result. If the Japanese Government would only institute, as there is in England, a Wild Birds Protection Act, insisting on a close season from March 1st to August 31st, it would save the country thousands of yen, and prevent the wholesale slaughter of millions of small birds which is carried on ruthlessly the whole year through. Making it punishable to catch, snare, net or take, the nest of any bird within the prescribed time, would save the lives of the pretty feathered songsters who are the farmer's and gardener's best friends, but who, alas, are getting more and more rare in this country."

Scarcity of Birds in Jamaica.—A correspondent sends us the following information respecting the scarcity of birds in Jamaica:—"The paucity of birds in the island of Jamaica is well known, and I have just chanced upon a curious and interesting explanation of the fact worth preserving. I take the explanation, exactly as it stands, from the manuscript notes of a deceased friend who visited the island some years ago, and who, had he not fallen a victim to yellow fever, would probably have revised them for publication in connection with other interesting matter. This is what he says:—'The practical absence of bird life from the island is easily explained, and the explanation is curious. It also affords an example of what happens when man in his great wisdom sets about improving on Nature and putting her right. Some long time ago the snakes of Jamaica, no doubt an ill-conditioned and venomous set, gave annoyance to a man whose name is now happily forgotten. This person determined to arrange the snake business on proper lines, and accordingly imported from India squadrons of the mongoose, which everybody knows has a partiality for snake diet, and the more deadly the snake the better the mongoose likes him. In time the mongoose completed its contract, and snakes no longer wriggled over the land. But instead of returning to its native home when there were no more snakes to kill, it hung in the new country until it got seedy and down at heel, and then its morals gave way. Having no more legitimate work to do, it took to

robbing nests, eating the eggs, and murdering the young, and the parents also when it could catch them. This one-sided fight ended in the practical extermination of the birds, and with their extirpation arose a fresh evil, which exists acutely in the island to this day. The far-famed Jamaica "tick" had, in ante-mongoose days, been kept in subjection by the birds of the air, and plagued not man nor beast. But with the disappearance of the birds the pernicious tick grew fat and multiplied until it became a power in the land, where it still holds the field. Start a Jamaica islander on the subject of ticks, and listen to his feeling talk! Some faint idea will thereby be gained of the commanding position which the villainous pest has won. It is now everywhere and the traveller need not waste time trying to avoid its attentions. It will have him, and he must be very thankful if it does not have him in more than three score and ten places at one time. Cattle have been known to refuse to enter fields on account of the all-pervading tick. Of late years attempts have been made to quelch the mongoose, but the agile and wary animal objects and survives together with the tick.'"

EXTREME PRECOCITY IN PIGS.

ON December 17 last, I was in a labourer's cottage where in a box on a chair near the fire were two pigs born that same day, between 3 and 4 a.m. They belonged to a litter of sixteen and had been given to the woman of the cottage, who was bringing them up by hand, there being too many for the sow. This woman told me that she went out of the room leaving the pigs in the box, and on returning, found them both on the floor. One was lying down in the fender and the other in a corner of the room by some wood, neither place far from the chair, yet still they must have got there after the leap for which they were none the worse. The box was about a foot high—eight inches would be a minimum—and the chair of the usual height. This was at twelve o'clock, so that the pigs were only some eight or nine hours old at the time. When I saw them they were some thirteen hours old, and on the cloth being lifted from the box they sprang up, placing their feet on the edge of it (prepared, as it seemed, to leap over) with the energy and precision of full-grown pigs. It was truly astonishing, for their size was most minute. One of them drank whilst I was there from a saucer of warm milk which the woman brought it, in exactly the same way, as far as I could see, as a grown pig gets up swill. For this and the leaping up of the pigs with their feet on the edge of the box and their heads peering over it with great energy and precision of movement, I can myself vouch, as also for their extremely small size. For their leaping

out of the box, thus placed, on to the floor, and their age at the time, I have only the woman's assurance. But how could she have been mistaken, and what interest could she have in volunteering such statements if not true? For myself I have no doubt that the facts were as she stated. I believe, too, that the pigs must have leapt rather than fallen down, for though it would have been easy for them to have fallen backwards *from* the edge of the box, they could hardly have got *over* it without such an exertion of force as must have amounted, practically, to a leap. I make these remarks because I do not think that this extreme precocity in the pig is generally known and accepted. Mr. Lloyd Morgan, in his recent interesting work *Habit and Instinct*, quotes an observation of the late Mr. Douglas Spalding as to a *two-days* old pig leaping from a chair, and then says, "When I suggested to a worthy farmer that he should repeat the observation for me his indirect reply, 'But who will pay for the pig?' sufficiently indicated what, in his opinion, would be the result of the experiment." With regard to the farmer's query, I may remark that even this woman who had found the pigs uninjured by their exploit, would not allow them to leap again from the box or even from the chair or a stool, and on this, I would suggest that people—"worthy" or otherwise—whose pockets are interested are the last to look favourably on experiments where there is even a remote possibility of their being injured in so vital a spot. Of what value can be the mere opinion of a money-thinking farmer on such a point as against Spalding's direct observation which, I submit, is now strengthened by what this cottage woman told me and what I myself saw?

Wamil Hall, Mildenhall, Suffolk. EDMUND SELOUS.

MY BIRD BOARD, AND HOW I CIRCUMVENTED THE SPARROWS.

HEN at the beginning of winter I set up a bird board I had only two guests, a robin and a hedge sparrow. It was not long before a solitary house sparrow (the only one that appeared to be about) joined the party; this I did not object to, but in a few days the house sparrow brought a friend or two, and I suppose the friends in turn invited their neighbours. At any rate these unwelcome guests swooped down in such numbers every morning as to swamp the whole concern. The robin and the hedge sparrow were nowhere, and were obliged to get a stray crumb or two when the sparrows had eaten their fill. A quarrelsome, rowdy, bickering lot, fighting, setting up their feathers and using all sorts of bad sparrow language by the hour together, these cheeky lawless vagabonds

of the bird world became a nuisance. My bird board had cost me some little trouble in making and setting up, and now I almost repented I had made it, for I promised myself no end of pleasure and amusement in seeing my little feathered friends enjoy themselves in a friendly way together. Sometimes instead of crumbs I put a chunk of bread that it might last out a little longer, but the sparrows in the end nearly always rolled it over the side of the board and my dog would find it. It is astonishing how heavy a weight a sparrow can carry ; I have frequently seen one fly away with a piece of bread the size of his own body.

One day it came into my head to set a draining pipe on end on the board and drop the crumbs and other food down into it. The tits, of whom I have quite a little colony, soon found the trick, and are popping in and out of the draining pipe all day long, and apparently delighted with the arrangement. The hedge sparrows, too, have learned to venture fearlessly down the pipe. As for the house sparrows, they come and go, perch on the rim of the pipe, crane their necks down as far as they can reach, but not one, as far as I have yet observed, has ventured down to the bottom. They doubtless think it is a trap set to catch them, and being wary birds do not mean to be caught napping. In short, they are tired of looking at food which they think is dangerous to come at, and have at last left the coast pretty clear for their neighbours. The robin does not venture down the pipe—he is a solitary feeder, always preferring his own company to that of his neighbour ; he gets a few crumbs close to the window ; the earliest bird to come and the last to go, he manages to take his meals in privacy and quietude. The tits, on the contrary, are a sociable yet self-reliant little folk, well able to hold their own in any company. I have often been amused to see one of them stand up to a sparrow and refuse to yield the least ground in getting a fair share of the food.

The tits are amazing eaters ; I put a bit of suet or fat meat and suspend it by a string from a plum tree close to the feeding board. I have often seen one peck away at the bread till he was tired, then hop to the water can, have a good drink, and then commence operations on the suet ; sometimes when he was clinging with his claws to the food a puff of wind would send him spinning round like a teetotum, but he did not seem to mind it in the least or let go his hold till he was satisfied. One big, grandly marked tit, which I call the bachelor because he appears to have no mate, is the master bird of them all ; when he comes to feed all the rest make way for him, he is evidently a king amongst them. From their vivacity and nimble movements my tits appear to be in splendid health and condition. They are flitting to and fro close to my sitting-room window the whole day long, and I have been abundantly repaid for any little trouble taken over them by observing their amusing and attractive ways. They are the comedians and acrobats of the bird world ; full of joyous life and blessed with healthy appetites they are

infinitely content with a morsel of suet dangling from a tree and a few crumbs of bread at the bottom of an old draining pipe.

Ankerdyne Cottage,
Knightsford Bridge, Worcester.

HERBERT GIBBS.

LIFE HISTORY OF A SAW-FLY.

(Trichiosoma lucorum.)

HEN the hawthorn flowers it attracts very many insects, as is well known to entomologists, who often capture valuable specimens which have come to suck honey from the blossoms. Bees of many kinds, dipterous flies, and the curious Hymenoptera known as Saw-flies vie with butterflies and moths for a share of the sweets.

Not very many people, entomologists excepted, seem to know anything about saw-flies, or even to recognise the family when they meet some of its members. A large variety of species, however, inhabit the British Isles, and some of them are nearly as large as hornets, though by the uninitiated they are generally mistaken for bees.

The particular species of which I wish to speak is quite common and may generally be seen flying about hawthorn trees early in the spring. In appearance it somewhat resembles a reddish-gray humble-bee, being covered with shaggy pubescence and about the same size and shape as the large white-tipped bee everywhere to be met with. Its life history, however, is widely different. Every Saw-fly goes through three stages before arriving at the perfect insect, viz., the egg, larva, and pupa. And it is from the method in which the eggs are laid that the Saw-fly takes its name. The female is provided with a strong ovipositor, serrated at the edges like a saw. With this implement she makes incisions in a leaf, or in the case of some species, a twig, and deposits her eggs in the wounds. These eggs, unlike those of Lepidoptera, grow to nearly double or even treble their original size before hatching, and that they absorb nourishment from the plant in which they have been placed is evident from the fact that, should it wither they also perish. The larvæ resemble, generally speaking, those of Lepidoptera, but differ from them in always possessing more than sixteen legs (including claspers) and black eye-spots. They are generally smooth, but may be protected with spines, or by a slimy secretion. When disturbed they frequently lash furiously with their tails and eject an evil-smelling liquid from their mouths, or they may expose powerful scent glands. The pupa stage is passed either in the ground, in rotten wood, or in pithy stems. A few make cocoons on the branches on which they have been feeding. The majority make no cocoons, merely lie up in a kind of cell hollowed out in

the earth or wood into which they have retired. Sometimes this stage lasts as long as nine months, for a good many sawflies are single-brooded and their larvæ will be full fed and "go down" by July, and not re-appear till the April or May following.

Our *Trichiosoma* is one of these. He starts life as a crescent-shaped green egg, embedded in a young leaf of hawthorn. When hatched he is a little whitish caterpillar with a big head and rather large black eyes. After his first moult he is covered with a white powder, which comes off when rubbed, disclosing a green, rather warty skin. He goes through several moults, feeding between whiles on hawthorn leaves. When about three-quarters grown he comes out green and warty without the powder, and so remains till full fed. Then he spins himself up in a stout cocoon fastened to a twig and waits till spring of the following year. After "Blackthorn winter" he will appear as a large grey four-winged fly, and the round of existence will start again.

E. F. Chawner, F.E.S.

REVIEW.

Audubon and his Journals. By Maria R. Audubon. With notes by Dr. Elliott Coues, 2 vols., 8vo., with 37 illustrations and 10 portraits. London: Nimmo, 1898.

It seems a tardy tribute to the attainments of a great man to receive at the hands of a granddaughter, forty-seven years after his death (in 1851), the first adequate biography of John James Audubon, one of America's most gifted naturalists.

It is true that this is not the first biography of him which has been attempted; but since Buchanan's *Life of Audubon* in 1866 exhibited a strange misconception of his character, omitted from the diaries which were then accessible almost everything relating to birds, and, moreover, was written before the discovery of the long-lost "Missouri and Labrador Journals," it has little claim to consideration at the present day. We learn from Miss Audubon that some of the missing journals only came into her hands about twelve years ago, while the long-lost completion of the "Missouri River Journals," *for which two generations had searched*, came to light by an entire accident so lately as the summer of 1896, beneath a drawer of an old *sécrétaire* at which Audubon used, for many years, to write. In the hands of the present biographer these journals have formed the chief sources of information, verified and supplemented by letters and memoranda diligently collected from all who could in any way aid the research.

It is difficult to say which forms the more entertaining

portion of the work now before us, that which relates to the travels and field-work in North America where the experiences of the day were written down at night while fresh in the mind, or the pages which are devoted to his journeys to England and France, and which contain his impressions of persons seen and places visited. For the generality of readers few pages can possess more attraction than those in which Audubon has described the personal appearance, manners, and conversation of the many gifted naturalists upon whom he called, or to whom he was introduced.

Here is his account of a visit to the celebrated wood-engraver, Thomas Bewick :—

"After ascending a long road or lane we arrived at Bewick's dwelling, and I was taken at once to where he was at work and saw the man himself. He came to me and welcomed me with a hearty shake of the hand, and took off for a moment his half clean cotton nightcap, tinged with the smoke of the place. He is tall, stout, has a very large head, and his eyes are further apart than those of any man I remember just now. A complete Englishman, full of life and energy though now 74 (April 13, 1827), very witty and clever, better acquainted with America than most of his countrymen, and an honour to England. Having shown me the work he was at, a small vignette cut on a block of box wood, not more than 3 in. by 2 in., representing a dog frightened during the night by false appearances of men formed by curious roots and branches of trees, rocks, &c., he took me upstairs and introduced me to his three daughters. . . . The old gentleman and I stuck to each other; he talked of my drawings and I of his wood cuts till we liked each other very much. Now and then he would take off his cotton cap, but the moment he became animated with the conversation the cap was on, yet almost off, for he had stuck it on as if by magic. His eyes sparkled, his face was very expressive, and I enjoyed him much more I am sure than he supposed."

April 16.—"I breakfasted with old Bewick this morning quite *sans cérémonie*, and then the old man set to work to show me how simple it was to cut wood! But cutting wood as he did it is no joke; he did it with as much ease as I can feather a bird; he made all his tools, which are delicate and very beautiful, and his artist shop was clean and attractive."

Two days after that he paid a farewell visit to the old wood-engraver.

"As we parted he held my hand closely and repeated three times 'God preserve you.' I looked at him in such a manner that I am sure he understood I could not speak. I walked slowly down the hilly lane, and thought of the intrinsic value of this man to the world, and compared him with Sir Walter Scott. The latter will be for ever the most eminent in station, being undoubtedly the more learned and more brilliant of the two; but Thomas Bewick is a son of Nature . . . he is an inventor and the first wood cutter in the world."

In six months' time Audubon was again in Newcastle, and on October 18 we find the following entry in his journal :—

"This morning I paid a visit to old Mr. Bewick. I found the good gentleman as usual at work, but he looked much better, as the cotton cap had been discarded for a fur one. He was in good spirits and we met like old friends."

The following year Bewick came to London and paid a visit to Audubon, at his lodgings in Great Russell Street.

August 30.—"While Mr. Swainson was sitting with me, old Bewick and his daughters called on me. Good old man! how glad I was to see him again. It was, he said, fifty-one years since he had been in London, which is no more

congenial to him than to me. He is now (August, 1828) 78, and sees to engrave as well as when he was twenty years of age."

Audubon seems to have been mistaken as to Bewick's age at this date, for we learn from a footnote on a previous page (237) that "he died November 8, 1828, being then just 75;" that is, in less than three months from the date of this interview.

During Audubon's visit to London, where twenty-four hours after leaving Manchester he reached the Angel Inn, Islington Road, he resided at 95, Great Russell Street, Bloomsbury. Here he stayed doubtless to be near his excellent friends J. P. Children and J. E. Gray of the British Museum, and within reach of others like E. T. Bennett, Vigors, Swainson (who entertained him at his house at Tittenhanger Green), J. C. Loudon, the editor of the *Magazine of Natural History*, and David Don, then Librarian to the Linnean Society. With Dr. Brooks he would visit the Zoological Gardens, then lately established, and with Bentley to Cross's Menagerie at Exeter Change, and to call on Leadbeater "the great stuffer of birds."

"Almost as soon as I reached my lodgings [he writes March 30, 1828] a gentleman, Mr. Loudon, called to ask me to write zoological papers for his journal, but I declined."

April 6.—"Mr. Loudon called and said he was anxious to have a review of my work in his magazine, and would write to Mr. W. Swainson, a naturalist and friend of Dr. Traill's, to do so. [This was afterwards published in *London's Magazine*.] He again begged me to write an article for him, for which he would pay eight guineas; but no, I will write no more for publication, except to accompany my own pictures."

August 25.—"Mr. Vigors wrote asking me to write some papers for the *Zoological Journal*, but I have refused him as all others."

The fact was that Audubon was in London to attend to the publication of his own great work on the *Birds of America*, and had quite enough to do in preparing the plates, writing the letterpress, and paying almost daily visits to his engravers, the brothers Havell.

He had taken the work out of the hands of Lizars of Edinburgh and placed it with Havell in London "because the difficulty of finding colourists made it come too slowly, and also because it could be done better and cheaper in London" (vol. i., p. 258).

For a long time he was assisted by William Macgillivray, who had been recommended to him by James Wilson, and no better or more fortunate choice could have been made. Audubon worked incessantly, Macgillivray keeping abreast of him, and Mrs. Audubon re-wrote the entire manuscript to send to America and secure the copyright there.

In April, 1828, his English journal contains the entry:—

"I have the honour to be a Fellow of the Linnean Society of London, quite fresh from the mint; for the news reached me when the election was not much more than over."

A few months later, namely, on November 4, 1828, after his return from Paris, he wrote:—"I have presented a copy of my

'Birds' to the Linnean Society." This consisted only of parts 1 to 20 of the work, which, at that date, was in course of publication, and was not completed until 1839, when it formed four volumes, folio, containing 435 plates. Two years afterwards he was elected a Fellow of the Royal Society.

JOHN JAMES AUDUBON.
From the portrait by Henry Inman.
(By the courtesy of the Publisher.)

From London he used to make excursions in various directions, paying visits to friends in Edinburgh, Newcastle, Manchester and elsewhere.

In Edinburgh he wrote :—

"Perhaps not a day passes without I visit in thought those mansions where I have been so hospitably received, the inmates of which I recall with every sense of gratitude ; the family of Rathbone [of Greenbank, Liverpool] always first, the Selby's [of Twizel] next ; in London, Mr. Children ; in Manchester, the Greggs and Bentleys and my good friend Sergeant ; at Leeds, Mr. Atkinson ; at Newcastle, dear old Bewick, Mr. Adamson [Secretary of the Literary and Philosophical Institute], and the Rev. William Turner, and here (at Edinburgh) Mr. Lizars ; my good friends Patrick Neill, Professor Jameson, Patrick Symes, and too

many to enumerate; but I must go back to Liverpool to name John Chorley, to whom I feel warmly attached."

No wonder he was well received. A man whose reputation had reached England before him, and who had letters of introduction to Baron Humboldt, General Lafayette, Sir Walter Scott, Sir Humphrey Davy, Miss Hannah More, Miss Edgeworth, Sir Thomas Lawrence and others (vol. i., p. 3), could hardly fail to be well received, and to be proud of his reception. "All were extremely polite to me" (he says) "a stranger in their land; but so have I ever found the true English gentleman." His own account of his first meeting with Sir Walter Scott is noteworthy. He was introduced to him by Captain Basil Hall, who on entering the room said, "Sir Walter, I have brought Mr. Audubon."

"Sir Walter came forward, pressed my hand warmly and said he was glad to have the honour of meeting me. His long, loose silvery locks struck me: he looked like Franklin at his best. He also reminded me of Benjamin West; he had the great benevolence of William Roscoe about him, and a kindness most prepossessing. I could not forbear looking at him, my eyes feasted on his countenance. His long heavy white eyebrows struck me forcibly. He was wrapped in a quilted morning gown of purple silk, and had been at work writing on the *Life of Napoleon*."

From the *Journal of Sir Walter Scott* (vol. ii., p. 344) we learn what the great novelist thought of his visitor, thus:—

January 24.—"Visit from Mr. Audubon who brings some of his birds. The drawings are of the first order, the attitudes of the birds of the most animated character and the situations appropriate. The feathers are most brilliant and are represented with a laborious degree of execution. This extreme correctness is of the utmost consequence to the naturalist, but rather gives a stiffness to the drawings."

Judged by the modern standard of excellence this criticism appears a very just one.

Audubon's meeting with Professor Wilson ("Christopher North") was a pleasant one for both.

"The more I look at Wilson," he says (i., p. 266), "the more I admire his originality; a man not equal to Walter Scott it is true, but in many ways nearly approaching him: as free from the detestable stiffness of ceremonies as I am when I can help myself; no cravat, no waistcoat, but a fine frill of his own profuse beard, his hair flowing uncontrolled, and in his speech dashing at once at the object in view without circumlocution, with a countenance beaming with intellect, and eyes that would do justice to the 'Bird of Washington.' He gives me comfort by being comfortable himself. With such a man I can talk for a whole day and could listen for years."

One more portrait must suffice, and it is one that can scarcely be passed unnoticed. This time it is Baron Cuvier, the great French naturalist, on whom he called when in Paris (i., p. 306).

"He had heard much of my friend Swainson, and greeted him as he deserved to be greeted; he was polite and kind to me though my name had never made its way to his ears. I looked at him, and here follows the result: Age about 65; size corpulent, 5 feet 5 inches English measure; head large, face wrinkled and brownish; eyes grey, brilliant and sparkling; nose aquiline, large and red;

mouth large with good lips ; teeth few, blunted by age, excepting one in the lower jaw measuring nearly three quarters of an inch square. Thus have I described Cuvier almost as if a new species of man."

He was invited by Cuvier to dine with him on the following Saturday at six. Accordingly on Saturday, *September* 6, we find this entry :—

"We proceeded after dressing to Baron Cuvier's house to dine, and were received by the Baron who presented us to his only remaining daughter. . . . As I seldom go anywhere without meeting some one who has met me I found among the guests a Fellow of the Linnean Society who knew me well—Captain Parry—. . . . and M. Lesson, just returned from a voyage round the world."

A week later :—

September 13.—"I had to take my portfolio to Baron Cuvier, and I went first to M. Geoffroy de St. Hilaire, who liked it much, and retracted his first opinion of the work being too large. . . . Cuvier pronounced it the finest of its kind in existence."

Further on we get a glimpse of the apartments in Cuvier's house, eight rooms filled with books, and a sort of laboratory, his *sanctum sanctorum*, in which he was found looking at a small lizard in a tiny vial filled with spirit. Audubon writes of this visit :—

"I see now his sparkling eye, half closed, as if quizzing its qualities, and as he put it down he wrote its name on a label.

He was then about to sit to Parker for his portrait. Reclining in a comfortable arm-chair he was

"clad in an old green surtout, a neckcloth that might well surround his body if unfolded, loosely tied about his chin, and his silver locks like those of a man more bent on studying books than on visiting barbers. His fine eyes shot fire from under his bushy eyebrows, and he smiled as he conversed with me."

We have dwelt so long on these portraits of celebrities that not much space remains in which to do justice to what follows. The "European Journals" are followed by the "Labrador Journal" (1833), descriptive of a voyage, long planned, to the coast of Labrador for the purpose of procuring birds and making drawings for the continuation of his great work. Here we might expect to find some allusion to the Great Auk which had a noted breeding haunt on Funk Island, off Newfoundland, and, at that time, was not yet extinct. In this, however, we are disappointed. His only allusion to this bird in the two volumes before us occurs in his "Missouri River Journals" (vol. ii., p. 131), where, under date August 5, 1843, he writes of the bison, "There is even now a perceptible difference in the size of the herds, and before many years the Buffalo, *like the Great Auk*, will have disappeared."

Some years previously (1838), he had noted in his *Ornithological Biography* (p. 316), that Mr. Henry Havell while on a voyage from New York to England *hooked a Great Auk* on the bank of Newfoundland in extremely boisterous weather, and also that when he himself was visiting the Coast of Labrador, the fishermen stated that the Great Auk still bred upon a low

rocky islet to the S.E. of Newfoundland (probably the Virgin Rocks off Cape Race), where great numbers of the young were destroyed for bait; but (he added), as this information was received too late in the season, he had no opportunity of ascertaining its accuracy. It is curious that no allusion to this incident, though previously published, is to be found in the "Labrador Journal" now printed.

The "Missouri River Journals" are most entertaining, and contain much that deserves quotation did space permit, particularly the account given of the "Buffalo" and the Bighorn in the *Mauvaises Terres* (vol. ii., pp. 141-148).

The concluding two-thirds of the second volume is devoted to a collection of "Episodes" in the life of the hunter-naturalist, of which no entire reprint has been hitherto made, although several of them originally appeared in the *Ornithological Biographies*. The descriptions are wonderfully graphic, and although it is not easy to select one for special praise where all are so good (and there are about sixty), we may cite in particular the description given of a flood on the Mississippi (vol. ii, p. 440). Too lengthy for quotation it would be spoilt by curtailment, and deserves, like many other chapters of this fascinating work, to be read *in extenso*.

The footnotes to the field journals supplied by an eminent living zoologist in America, Dr. Elliot Coues, are very much to the point, and enable the identification of species referred to by Audubon under names which since his time have been superseded.

Finally, we are presented with several portraits of Audubon taken at different periods of his life, which depict the striking personality of a most remarkable man. Long-haired, eagle-visaged, with bright, piercing eyes, we can well believe in his possession of that wonderful vision which so well served him in his long and arduous journeys, and surprised even the keen-sighted Indian.

J. E. H.

OUR EXCHANGES.

Hampstead Heath Protection Society.—We have received the first Report of this useful Society, together with a reprint of numerous extracts from the public press on their cause. We shall return to this subject shortly, and in the meanwhile will only recommend the Society to all Londoners. The subscription is half-a-crown, and the Treasurer, S. R. Scott, Esq., Lloyd's Bank, Rosslyn Hill.

Our Animal Friends for March and April. In the former number of our American contemporary is a very level-headed article on "The Necessity and Humanity of Destroying Homeless Animals," from which we extract the following:—

"If homeless dogs could be simply exterminated, there would be no rabies; there could be no hydrophobia; and there would be no annual terror of hydrophobia. And then, the dog race might be universally delivered from the horrible infliction of the muzzle. It is the dread of hydrophobia which causes whole com-

munities to inflict this torture upon dogs in general. As a preventive of the disease it is wholly inefficient ; for if any dog ever does actually have rabies, he is perfectly sure to be an unmuzzled dog, and nearly certain to be a homeless or half-homeless dog. Thus, in eliminating the homeless or worse than homeless dog, we are actually banishing the danger of rabies and with it the presumed necessity of universal dog torture by the use of the muzzle."

Mr. Leeson Prince sends us an interesting *Summary of the Meteorological Journal kept* by him *at Crowborough, Sussex*, during 1897. It is illustrated with a photograph of some enormous hailstones, reaching 3in. by 2in., which fell at Seaford on May 30.

NATURAL HISTORY NOTES AND QUERIES.

Instinct and Experience.—Under the heading "How Birds learn to make Nests and Songs," your contributor W. J. C. Miller (NATURE NOTES for September) has given us some very interesting remarks on a fascinating subject. With regard to the two points, birds' nests and birds' songs, it must be admitted that, on the whole, songs present much less difficulty than nests. Imitation of parents or (as on page 186) foster parents, seems almost a sufficient explanation. The case of the cuckoo stands, so to speak, apart. How he learns his call is a problem, I suppose as yet unsolved. Not of his foster parents, nor, I presume, in England at all, and as to his own ways after he leaves us I fear we know practically nothing. As to the nests of birds, A. R. Wallace, in one of his essays, argues strongly in favour of experience as against instinct. He suggests that in their natural state an old bird pairs with a young one, and that both act upon the experience of the senior partner. On this argument the case of the chaffinches conveyed to New Zealand—assuming the facts to be correctly stated—is a very interesting comment. In this case there was no senior partner, and yet a nest was built : was not this the result of instinct? In the same essay Wallace quotes the case of some house martins which were observed in the course of years to have modified the shape of their nests to suit them better to the building to which they were attached. So, at least, it was believed. But if we take the insect world we shall find examples of actions with which experience can have nothing to do, unless we assume that butterflies and gnats, for instance, remember their own previous larval state, and exercise forethought for the benefit of their own children. What makes the gnat and the dragon-fly lay their eggs in the water? Why do the cabbage butterfly and the goat moth deposit theirs, in one case on cabbages, and in the other on trees? On the other hand, the conduct of the retriever, who deliberately killed one of two birds when he found that he could not carry both (which I believe is sufficiently authenticated) cannot, I suppose, be put down to anything less than a distinct reasoning power, which induced the dog to depart from his regular practice on sufficient grounds applying to that special case. Sometimes, as with us, the force of habit triumphs over common sense, so to speak. Some sheep were kept for some time in a meadow with a thick hedge on the south side of it. When rain came from the south this hedge afforded a welcome protection. In course of time the hedge was removed, and an open wire fence substituted for it. Rain came on, and I saw the sheep run to the open fence, and stand along it, as they used to do along the hedge ; but certainly without obtaining the same satisfactory result. In such matters the accumulation of observed facts seems almost always interesting, while the propounding of theories is almost always rash.

Otham Parsonage, Maidstone. F. M. MILLARD.

Rats.—A man engaged in ditching in this village has come across a quantity of hen's eggs hidden by rats in their holes in the side, and near the bottom of a ditch. The ditch was about a mile long, and its nearest point to a farmyard 200 yards. A few of the eggs were broken, the rest were whole. They were distributed singly along the ditch, here and there, none being less than half a dozen yards apart, and consequently the rats must have carried them half a mile in many cases. How did they do it?

Market Weston, Thetford. EDMUND THOS. DAUBENY.

Summer Migrants.—It is most unusual not to have heard or seen the chiff-chaff at this date, April 8, or any other summer migrants. In looking and listening for any indication, a few days ago, I came across a pair of the dainty little gold-crested wrens which have become extremely scarce in the locality. I trust other readers in various localities will again furnish notes on the arrivals of migrants, as I hope to do.

Redditch. J. HAM.

The Cuckoo and the House-Sparrow.—As April is now approaching I send a few lines respecting the earliest appearance of the cuckoo in this neighbourhood, as the result of more than fifty years' consecutive observations.

It was on April 9, in the warm and genial year of 1857, and, curiously enough, it was on the following day that I heard the nightingale. Old tradition states that the 14th is the usual time of her appearance in this country, which is the date when Heathfield Fair is held, so that it is often called "Cuckoo Fair." A few years since, a poor woman of this neighbourhood was observed to be getting up very early on one April 14, and, upon being questioned why she did so, replied that "She was a gooing to Heffel Fair to see the old cuckoo *turned out*!"

May I add a few remarks upon that confirmed rascal the house-sparrow? I do not believe he is an insectivorous bird; at all events, I have never been able to obtain any evidence of it by careful examination of his crop; nevertheless, I have occasionally seen him have a snap at a butterfly. That he has a fair amount of brains is evident from the fact of the cautious manner in which he places his nest in the farmer's wheat stack. Many farmers have assured me that he will never have his nest in a stack which rests upon the ground, but invariably selects one which is mounted upon a framework at some distance above the soil.

The Observatory, Crowborough Hill, Sussex. C. LEESON PRINCE.

Nightingale.—The nightingale has been heard here for the last fortnight. Is it not rather early? We are seven miles from Cambridge.

Foxton, April 7. A. M. G.

[Dr. Roberts' 'Naturalist's Diary,' quoting from Rev. T. A. Preston's Marlborough Records, gives April 24 as the earliest date, Mr. Aflalo "the middle of April."—ED. *N.N.*]

Hawfinches.—In response to Mr. F. M. Millard's suggestion, I beg to inform your readers that on February 20 a fine male hawfinch appeared in my garden and remained about it until February 27, when a female made her appearance. This pair (presumably) remained with us, on and off, until March 27, since which date they have not been observed. From enquiry it seems they are uncommon here now; and the above are the only specimens I have seen here in thirteen years. The male bird was not at all shy, frequently coming close up to the window overlooking the lawn, and apparently much enjoying the fruits or "keys" from neighbouring ash and sycamore trees, with which the lawn was strewed.

Westfield, Pinner, Middlesex. ARTHUR R. GILLMAN.

I have for many years kept a list of our local birds, but to my friends and myself the hawfinch (*Coccothraustes vulgaris*) is new in this locality. One first made its appearance on our front lawn on March 2, 1898. On the 6th it was accompanied by what I take to be a female, as it had not such bright glossy plumage as its companion. On the 24th four appeared, the two strangers being I should think two young of last year, with their parents, as they showed no white on the tips of their tails, and were altogether slightly immature looking. The old male appears by itself nearly every afternoon, always feeding, sometimes picking something off the grass, at other times eating the holly berries. It clips off the prickly leaves if they are in the way of its mouth—about a berry—and finally having eaten the pips, drops the skin, nearly whole, on the ground. All this I watch through glasses from the billiard-room window. It moves about like a mechanical toy, with little spasmodic hops, and flies like a very pronounced chaffinch. It has short pink legs, tarsi and feet, and its wings when folded just clear the pure white at the tip of the tail. When flying it shows the white on wing-coverts and primaries very distinctly. It is about the size of a small starling, but

is shaped more like a parrot than one of our English finches. I hope they have come to stay.

The Cedars, Lee, S.E. JOS. F. GREEN.

It is a mistake to suppose that these birds are "harbingers of hard weather." They breed in this neighbourhood annually, and are terribly destructive to green peas in the pods. A pair of old ones and four or five young ones after leaving the nest are frequently seen and heard uttering a squeaky note as they follow the parent birds, often high in the air, passing from place to place. I have sometimes felt compelled to catch them or lose my crops of peas, and this is easily done by baiting with green peas shelled out. I have kept them in cages when caught. Hawfinches visit my orchard every winter for damson stones, which they split open and take the kernels. I have also seen hundreds of haw-stones cracked by them and lying under trees, in Warwickshire, at Wooton Wawen. They are also partial to hazel nuts and hunt for fallen fruits in woods among the leaves. I saw three go into a wood near, a few days ago. They also feed, as do bullfinches, on the seeds of the common maple and ash in winter. The nest of the hawfinch is usually, if not always, built in old tall apple trees, and is loose and rough to look at from the ground. I have only met with one, but have heard of several being taken in the locality.

The Wren's Nest, Astwood, Redditch. JAMES HIAM.

Thrush's Nest on Ground. — Mrs. Ticehurst, Hon. Sec. Petersfield Branch, sends the photograph, here reproduced, taken by her husband on account of the unusual situation of the nest, viz., under a plant of Brussels sprouts.

Reed Bunting's Nest with a "Lid."—Since the note on p. 37 was written, Mr. O. V. Aplin has found a copy (which he had mislaid) of the first photograph taken of the nest. It shows the so-called lid standing perfectly upright. His note, too, made on seeing the nest shortly after it was taken, states: "When pressed down the upper part covers the opening of the nest exactly like a lid. When set free it springs up again and stands stiffly upright." The two representations of the nest on p. 37 must, so far as they suggest a closed state as the original one, be regarded as misleading.

I. L. O.

Floral Emblems.—Can some one explain Scott's lines:—

"Foxglove and nightshade side by side
Emblems of punishment and pride."

Lady of the Lake, Canto I., stanza 12.

A. M.

NEWS FROM THE BRANCHES.

Abinger and Shere.—Professor Boulger will conduct a walk for the Abinger and Shere branch of the Selborne Society on Saturday, May 14, starting from Gomshall Station at three o'clock. Tea will be provided at West Hackhurst, and will be followed by an address from Professor Boulger. Any Selbornians who are able to share in the proceedings are requested to send a card to that effect to Miss Forster, West Hackhurst, Abinger Hammer, Dorking.

Croydon and Norwood.—On March 30, a Museum Evening was held at Seneca Hall, under the presidency of the Rev. F. E. J. Bird, when various natural history objects were exhibited by Miss McNaught, Messrs. Everson, Putnam, Adeney, E. J. Davies, and others. The Hon. Sec. gave an address on "Some Local Wild Birds needing Protection," which was illustrated by slides kindly lent by the Society for the Protection of Birds.

On April 21, a lecture was delivered at the Public Hall, Croydon, by the Rev. H. E. U. Bull, M.A., on "The New Forest," which was illustrated by the lime-light lantern under the care of Mr. W. H. Coldwells. The slides were of an excellent description, and the lecture contained many passages of anecdote and humour. The business of the Annual Meeting preceded the lecture.

SELBORNE SOCIETY NOTICES.

BRANCH CONTRIBUTIONS FOR 1897.

	Payments for Mags.	*Contributions.*
Abinger & Shere	£2 7 8	£1 13 4
"Atalanta"	1 16 1	...
Barmouth	2 16 2	0 15 0
Bath	2 18 4	3 0 0
Birmingham	14 9 8	6 11 0
Brighton	2 18 3	1 11 4
Clapton	6 5 8	6 5 0
Ealing	5 19 2	1 3 8
Farnham	0 15 0	0 15 0
Halifax	3 5 0	..
Havant	1 0 0	...
Kensington	14 10 0	...
N. Somerset	2 12 0	1 10 0
Northern Heights	11 5 4	...
Nottingham	3 0 0	...
Portsmouth	0 13 10	...
Petersfield	1 5 6	...
Rape of Lewes...	4 15 2	0 10 0
"Richard Jefferies"	3 10 0	0 10 2
Southampton (total received) ...	7 3 6	...
Southsea	0 16 2	...
Weald of Kent...	1 1 4	0 8 6
Wimbledon and Putney	4 10 0	5 0 0

Field Club :—

May 7.—Meet at Hanwell Station (G.W.R.) on arrival of train due at 3.12 ; and walk through the fields to Northolt. Tea at the Inn opposite the church. Paddington, 2.50; Ealing, 3.6; Broad Street, 2.20; Willesden Junction, 2.52. Guide, Mr. Ravenshaw.

May 21.—Leave Woodside Park Station (G.N.R) on arrival of train leaving Moorgate Street at 2.50; King's Cross, 3.2 ; Finsbury Park, 3.12. Thence by Totteridge Common to Mill Hill. Tea at "Adam and Eve," Mill Hill. Return from Mill Hill Station. Guide, Mr. Carpenter.

June 4.—Arrangements are being made to hold a united excursion with the S.E. Union of Scientific Societies, to Addington Park, Croydon. Detailed particulars will appear next month.

All members and associates of the Selborne Society are invited to attend the meetings of the Field Club. The total distance walked does not exceed ten miles, part of the distance being traversed before and part after tea.

Council and Committee Meetings :—

The next meetings of the Council will be held on May 3, and June 7 at 5.30 ; of the Magazine and Leaflet Committee on May 17 and June 21, at 5.30. Important business relating to the Conversazione and the Annual Report will be transacted at the Council meeting on May 3.

International Congress of Zoology.—Under the Presidency of Sir John Lubbock, Bart., M.P., F.R.S., the Congress will commence its meetings at Cambridge, on August 23. Detailed particulars can be obtained of the Secretaries, at 3, Hanover Square, London, W., who send a cordial invitation to members of the Selborne Society to be present at the Congress.

South Eastern Union of Scientific Societies.—Attention is drawn to the meetings of the above Union, which will be held in Croydon on June 2, 3 and 4. President-elect for the year, Prof. G. S. Boulger, F.G.S., F.L.S. Numerous papers will be read, and excursions arranged.

ANSWERS TO CORRESPONDENTS.

E. E.—We were in error last month. There is a *Flora of Sussex*, by the Rev. F. H. Arnold (Hamilton, Adams & Co.), 1887.

Subscriber.—*Our Country's Flowers*, by W. J. Gordon (Simpkin, Marshall & Co.), 6s. ; *How to Study Wild Flowers*, by Rev. George Henslow (Religious Tract Society), types only ; *Flowers of the Field*, by Rev. C. A. Johns (S.P.C.K.), 6s., of which a new edition, by the editor of NATURE NOTES, is in the press ; and *The Botanist's Pocket Book*, by W. R. Hayward (Bell), 4s. 6d., more difficult.

N. C. W.—Your plants are (1) *Ranunculus Flammula*, (2) *Euphorbia amygdaloides*, (3) *Euphorbia helioscopia*, (4) two distinct plants, *Ranunculus sceleratus* and *Galium Aparine*, (5) *Rubus Chamæmorus*.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 34, Argyll Mansions, Addison Bridge, London, W. ; letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 102. JUNE, 1898. Vol. IX.

SELBORNIANA.

Annual Meeting and Conversazione.—The Annual Meeting was held at the Society's Rooms, 20, Hanover Square, on the evening of Monday, May 23, the President, the Right Hon. Sir John Lubbock, Bart., F.R.S., M.P., in the Chair. The Council's Annual Report* having been taken as read, the President in moving its adoption said :—

As time goes on and the population of our country becomes denser, the necessity for such a society becomes greater.

The human race has lived for so many thousand years mainly on the produce of the chase, that the predatory instinct has become deeply seated in the human breast, and particularly in the childish breast. It is not of course that they are cruel, but they do not realise the pain they are inflicting.

The presence of man is not of itself unpleasant to animals. Some of them, at any rate, really seem to enjoy our society. That a large population is compatible with animal life, and especially with bird life, we see in our London parks and gardens, where the woodpigeons and seagulls are welcome additions to our town life.

The London County Council have done and are doing all they can to preserve the wild creatures in the county of London. They would, I am sure, listen to any suggestions which might conduce to this desirable object, and are entitled to the thanks of all lovers of Nature for what they have already accomplished.

After some remarks on the Report itself, Sir John continued :—

We meet at a moment when the country is exceptionally

* This will appear in the July number.

lovely. It is many years since we have had such a leafy month of May, such a fair promise of a glorious summer, not only from a farming, but from an artistic point of view. The foliage is full and rich, and we may quote with exceptional truth

> "The woods are filled so full of song,
> There seemed no room for sense of wrong."

Unfortunately the old ideas of destruction are by no means extinct.

Sir John then read the paragraph from the *Daily Telegraph*, which we quoted on p. 83 under the heading "Insanity in Lancashire," and went on to say :—

What, however, could we expect when osprey feathers are actually worn in the army! He had spoken to the authorities and sincerely trusted that they would put a stop to this cruel regulation.

In the great Indian epic the Mahabharata, the seven Heroes with their wife Draupadi (for it is a very interesting case of polyandry) and their dog find themselves at the gates of Heaven. They are admitted, but are told that no woman can enter. They decline to do so on these terms, but eventually Draupadi is allowed to enter. The line however, is drawn there—no mere animal can come in. Again the Heroes demur. They will not leave their faithful hound, and he also is admitted.

Some Christian theologians—even in recent years—Kingsley, for instance, have been disposed to believe in the immortality of animals. However this may be, we ought at any rate to treat them kindly while they are alive.

When we consider how much we owe to the dog, to the horse, the ox, the cow, the sheep, and our other domestic animals, we cannot be too grateful to them ; and if we cannot, like some ancient nations, actually worship them, we have, perhaps, fallen into the other extreme, underrate the sacredness of animal life, and treat them too much like mere machines.

In the sad and touching account given by the *Times* of the last hours of the great Statesman whose death we are all mourning, we are told that almost his last words were "Kindness, kindness, kindness, nothing but kindness on every side." That was an utterance of gratitude on his part, but as a guiding principle of life it expresses the ideal of the Selborne Society. How much brighter and happier the world would be if we acted on it, not only with regard to the lower animals, but amongst ourselves also. In the words of Thomas à Kempis, "If the heart be right then will every creature be to thee a mirror of life, and a book of holy doctrine."

The Hon. Mrs. R. C. Boyle, in seconding the resolution, lamented the continuance of the cruel fashion of wearing birds as ornaments, and alluded to several cases in which birds put temptation in the way of boys by persisting in building their nests in most curiously exposed positions, a titmouse, for instance, having repeatedly built inside a pump in her own garden,

though several times pumped out, and another—or more probably a succession of others—having had a nest for eleven years in succession in a roadside letter-box in Scotland, where passing boys naturally could not resist the temptation of dropping an occasional pebble in upon the nest.

Mr. J. L. Otter, the Hon. Treasurer, in supporting the resolution, alluded to the financial position of the Society, which had, he said, undoubtedly suffered from the drafting of many of the members into branches, so that a smaller contribution was received from them individually by the central Society than formerly. The work of the Society, especially in printing and disseminating leaflets—one of its most effective modes of operation—had in consequence been crippled, and an effort was necessary to place the Society once more on a satisfactory financial basis, with a balance on the right side.

The adoption of the Report having been carried unanimously, Professor Boulger, the Hon. Editor, proposed the re-election of the President, Vice-Presidents and officers, with the addition to the list of vice-presidents of the names of Dr. G. B. Longstaff and G. M. Murray, Esq., F.R.S., Keeper of the Botanical Department in the Museum of Natural History. In doing so he alluded to some of an editor's difficulties, such as contributions written on both sides of the paper; illustrated the constant need for such a society by pointing out the defectiveness of our laws as to cruelty to animals—evidenced in a recent case at Westminster Police Court, where Mr. Shiel, the presiding magistrate, whilst admitting that he did not like the law, was compelled to discharge a man, charged with gross cruelty to a rat, because it was not a domestic animal—and appealed to the members present to enlist new members to extend the Society's operations more widely over the kingdom, and increase its power for good.

The Right Hon. Sir Edward Fry, in seconding the resolution, suggested that there was no ground for discouragement in the fact that thirteen years' work had had little effect upon fashion in the matter of wearing birds' feathers, since Martin's Act itself was only some fifty years old, and already there was the hopeful sentiment that its provisions required extension so as to include wild as well as domesticated animals. He was of opinion that landowners should be given some protection, which they had not at present, against those depredators who came down by train from our great centres of population and carried off the wild flowers and ferns wholesale.

The resolution having been carried unanimously, C. W. Radcliffe Cooke, Esq., M.P., proposed a vote of thanks to Sir John Lubbock for presiding, and in so doing expressed his own determination to do all he could to promote so useful a society in Herefordshire, and alluded to his own advocacy during last year of the adoption in England of that excellent American institution, Arbor Day, he being specially interested in the planting in Kent of vintage apples in addition to edible varieties, so as

to introduce the manufacture of cider, and consequently the prevention of a waste of fruit in years when there happens to be a glut.

The Rev. H. E. U. Bull, in seconding the resolution, alluded to the loss the Society had sustained in the death of the Rev. Prebendary Gordon, of Harting, Sussex, who was passionately fond of animals, especially birds, and asked permission to include in the vote of thanks those ladies and gentlemen who had kindly lent objects for exhibition that evening.

The resolution was carried with acclamation, and Sir John Lubbock briefly returned thanks and then left the chair.

In the Conversazione that followed, a large and most interesting series of microscopes and slides were exhibited by members of the Royal and Quekett Microscopical Societies; and numerous pictures, especially paintings of flowers, and other natural history objects, were kindly lent by Mr. F. W. Ashley, Mrs. Brightwen, Rev. Professor Henslow, Mrs. G. E. Marindin, Mrs. Phillips, Miss F. M. Pilkington, Messrs. R. H. Read, R. M. Wattson and others. Mr. R. Marshman Wattson gave a demonstration of living aquatic insects with a lantern microscope; the Rev. H. E. U. Bull, M.A., exhibited and described a charming series of lantern slides of scenes in the New Forest; Mr. H. W. Ravenshaw exhibited the series of beautiful slides of birds, from photographs taken from life by Mr. Lodge, lent by the Society for the Protection of Birds; and Mr. E. A. Martin, F.G.S., described the slides of Selborne which are the property of the Society and may be borrowed by Branch Secretaries.

A Protest.—Will you allow me, through your columns, to call the attention of all lovers of nature to an article entitled "Photographing a wounded African Buffalo" that appears in *Harper's Magazine* for April. The author, Mr. Arthur C. Humbert, tells us, with great circumstantiality and with evident self-satisfaction how, during a tour through Portuguese East Africa, he shot an African buffalo, and, taking out his pocket camera, photographed the animal in six successive stages of mortal agony. The photographs are reproduced in the article, and, together with the descriptive matter appended, give a remarkable picture of the writer's mind.

The brutal callousness of this so-called "sportsman," who, after wounding a noble animal, instead of putting him out of his agony, calmly photographs him during his death throes, is, I think, worthy of the severest reprobation, and the publisher who could print such an article, merely to gratify the morbid taste of a section of readers, is scarcely less blameable.

A. L. Stevenson.

Botany in the London Parks.—We are pleased to see that the London County Council has adopted the proposals of its Parks and Open Spaces Committee on this subject, to which we referred in our last number (p. 82).

SPRING:
A DREAM FULFILLED.

AGAIN we wait thy coming: through the drear,
Long nights and meagre days we dream of thee,
And think thee near when thou art far away,
And watch the herald buds on bush on tree
Unfold, ere yet thy footsteps touch the earth.

Spring with the willow-blossoms in her hair,
And wind-flowers on her bosom—snow to snow—
Spring with the celandine to star her path;
The blue-bell and the primrose in her train,
And subtle scent of hidden violets
Moving before her!

Thus we dream of thee.
And, while we dream, the hollows of the hills
Grow fair with March-born daffodils, that light
Their shadows with faint flame at earliest dawn.
Below, the flocks are stirring, eager lambs
Utter the clamant cry which, everywhere,
Awakes the mother's heart and saves the world.

The youth and love and beauty of the earth
We greet in thee, and sunnier climes send forth
Their swift-winged minstrels over land and sea
To hymn thy progress.
Overhead, the clouds
Sail their blue ocean in white majesty
And shadow chases shadow on the grass.

Now moves the new wine through the veins of earth,
And all the air is tremulous with wings
And flash and hum of myriad-moving life.
At last the mill-pond, willow-watched in sleep,
Wakes with a smile, as our first swallow's wing
Brushes her cheek in passing—
And no more
We dream about thy coming. Thou art here.

April, 1898. RICHARD F. TOWNDROW.

NATURE'S HAPPY FAMILIES.

AMONG the varied sights, non-euphoniously termed "gutter-shows," of the busy streets of London and our large provincial towns, few have had greater popularity in their day than the so-called "Happy Family." At the present time, the once familiar spectacle of the cage mounted on wheels, with its heterogeneous collection of small mammals and birds, rapacious and otherwise, living in apparent amity together, is rapidly becoming a thing of the past. As the novelty has worn off, the receipts have doubtless declined proportionately; and the enterprising devisers or trainers of these liliputian menageries have been compelled to direct their questionable talents elsewhere. To Selbornians this will hardly be a matter of regret. The cowed appearance of the majority of the unhappy creatures thus "cabin'd, cribb'd, confin'd," is sufficient evidence of the suffering they have endured. In addition, the knowledge remains that, under the ordeal they have passed, there must of necessity have been many victims ere any such result could have been attained. But it is not to these exhibitions which it is primarily intended to refer, but to kindred displays, apart from human agency, which are from time to time observed in the United Kingdom.

The vagaries of Nature are often beyond comprehension. Rules, seemingly of the most inflexible type are often broken, and there are few without an exception. Prominent in this category are the peculiar associations of animals of totally opposite disposition, which occur underground; realising to a certain extent the well-known lines of the *Faerie Queen* :—

> "The lyon there did with the lambe consort,
> And eke the dove sate by the faulcon's side;
> Ne each of the other feared fraud, or tort,
> But did in safe securitie abide!"

Not long since, two practical illustrations of Spenser's words came under the writer's notice, in one day, whilst shooting in the Cambridgeshire fens. While I was ferreting in the centre of a field honeycombed with burrows, a couple of rabbits bolted and were immediately followed, from the same hole, by a blue-rock pigeon. Shortly afterwards, close by, the same incident was repeated. An hour or two later, under identical circumstances in a fresh spot half a mile away, a pair of full grown polecats emerged from some earths, out of which, just previously, several rabbits had been driven. On enquiry it was ascertained, on good authority, that for many years a colony of polecats had inhabited this subterranean abode, jointly with rabbits; and that the latter were more numerous and destructive there than in any other portion of the estate. Whilst such semi-social relations between pigeons and rabbits may be regarded as curious, that of ferocious polecats and timid rabbits hardly seems

credible, except to an eye-witness. Blue-rock pigeons, in default of cliffs or caves being available, not infrequently nest in rabbit holes; in the same manner as do puffins on the coast.

Betwixt badgers, foxes and rabbits there would appear to be a sort of affinity. It is by no means an unusual occurrence to find them dwelling peaceably together in the same holes or burrows, each retaining its own division or chamber, that of the badger being known as an "oven" or "butt." An instance of the kind, near at hand, may now be found in Epping Forest, barely a mile west of the picturesque village of Theydon Bois.*

There are, however, occasions when the harmony of these relations is disturbed. Badgers are not entirely free from the heinous crime, in a sporting sense, of vulpecide. When Madam Brock has a litter she is rather apt to vent her fury on any unfortunate fox cub that may cross her path. Sometimes there is reason for believing that the badger is wrongfully accused. The old fallacy that "dog don't eat dog"—according to the literal meaning—has long since been exploded. Various animals now and again destroy their offspring, and the vixen is not altogether absent from the list. During prolonged severe weather and consequent famine, the rabbits in the immediate vicinity run the risk of having to pay the penalty, but in general escape scot free. They suffer, then, mainly from the foxes, as the badgers hibernate at such seasons, and even at ordinary times usually confine their attacks to young rabbits. The old doe rabbit, it will be remembered, nearly always breeds away from the burrows. To escape molestation by the bucks, she scratches out an isolated shallow hole or "stop" in the loose soil under the bushes in the woods, or among the furrows of the ploughed land, where, in solitude, she brings forth her young.

The powerful claws of the badger enable it to construct an earth with comparative ease—a fact which the crafty but indolent fox is not slow in turning to account. Besides, the cleanly habits of the badger, from a sanitary point of view, render it a desirable comrade, which can scarcely be said of the fox. Indeed, if, in the temporary absence of a badger, a fox enters its "oven," the former shows a marked repugnance in re-occupying the place for days afterwards, until the scent has entirely disappeared, an antipathy akin to that displayed by the rabbit to the odour of the ferret.

Burrows generally may be regarded as havens of refuge for living things. Wounded hares, pheasants or partridges creep into them to avoid marauders, or to die in peace. During the cruel frost in the early part of 1895, the writer came across a pathetic picture in Epping Forest: the stiffened bodies of three

* A plate of this badger-earth appears in "The Mammals, Reptiles and Fishes of Essex," by Dr. Henry Laver, recently published by the Essex Field Club.—ED.

blackbirds, starved and frozen to death, lying, huddled together, in the entrance to an earth in which they had vainly sought shelter.

In these haunts the stoat and weasel, or even the otter if water is near, will take up their quarters. At Wanstead Park, a few years back, a stoat resided for a long period in some holes where rabbits were plentiful, without, so far as was known, interfering with his neighbours. But the extended truce was followed by an outbreak. One day a keeper, passing by, saw the stoat suddenly attack an old buck rabbit, which retaliated so furiously that the assailant was forced to retreat; and it is to be hoped was taught better manners for the future. Familiarity had perhaps bred contempt on the rabbit's part. Hence his valorous and successful defence.

Mr. John Watson, F.L.S., describes an occasion when among other strange tenants unearthed were a brown owl, stock-dove, and sheldrake; each of which happened to be breeding in the same mounds. Both stock-dove and sheldrake are semi-burrowing birds, *i.e.*, they take advantage of any cavity in the ground for nesting purposes, a proceeding which is occasionally followed by the owl, jackdaw, and even other birds.

In Scotland badgers and wild cats at times share together the seclusion of the cairns on the lonely hillsides.

A peculiar incident was recently reported in the *Field*. Two gentlemen were rabbit-shooting near Lancaster. A ferret was put into a small burrow from which bolted, in the order named, a rat, three rabbits, and a cat. Some years ago a similar case was reported by the same paper; in which also appeared an account of the dislodging from an earth of a fox, cat, and seven rabbits.

Adders are often perceived in warm weather, basking in the sun, in the proximity of rabbit holes, into which they dart if alarmed. The late Mr. Jesse, half a century back, stated that in the digging of a drain at Walton-on-Thames, a common snake and slow-worm were found in close company with some vipers, all in a torpid state.

Many other instances could be quoted, but those given afford sufficient idea of the singular communities which inhabit these hidden retreats.

There is another phase of animal life which may be alluded to as coming within the title of the present article, viz., that of animals acting as foster-parents towards the young of a totally different species or even order. The hen hatching and rearing ducklings, pheasants, or partridges, through man's intervention, is a case in point, just as in Nature the hedge-sparrow or other small bird ministers to the wants of the young cuckoo. There are other events where brute instinct is entirely superseded, which are more puzzling to understand. The domestic cat, by way of example, is not renowned for her tenderness of

disposition; yet, under certain circumstances, she will act as a model foster-mother. If her kittens are taken away and replaced by young squirrels, rabbits, or leverets, she will suckle and bring them up as she would her own offspring. Last year a batch of young squirrels were consigned to the London County Council for turning out in the Metropolitan Parks. Some of them were found to have been removed too early from the "drey" or nest, being incapable of feeding themselves. At this juncture a cat was obtained which had just had kittens, and for these the squirrels were substituted, and in due course successfully reared. About the same time a remarkable exhibition took place at an inn near Witley, in Surrey. A cat was shown nursing an interesting family consisting of two kittens, a squirrel, and no less than seven rabbits. Statements have appeared in print of similar feline good offices towards rats and mice, but it is extremely doubtful how far they could be authenticated. Probably whilst the cat's behaviour savours of maternal feeling, it is principally dictated by functional causes arising from a natural desire to relieve herself of her milk.

H. CHIPPERFIELD.

IN A GULLERY.*

SUDDEN the lilies of each lonely mound
Sprang into voice and palpitating wing.
I seemed a guilty and unwelcome thing:
Ten thousand shadows round me and around
Perplexed the air and danced along the ground:
Each sooty head in passion dared to fling
A world's defiance, and I felt the sting
And arrows of that deprecating sound.
Then gazing downward, at my feet I saw
The silent cause of all these sorrowful cries
Large jewels blotched, and brown and green and blue
In simple caskets wove from rushey straw.
I thanked high heaven for hearts so good and true,
And shared the hope for life that never dies.

H. D. RAWNSLEY.

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* Canon Rawnsley writes: "I send you herewith a sonnet which I wrote after visiting the very interesting '*gullery*' of black-headed gulls at Ravenglass last Wednesday, April 27. I am glad to be able to report that, thanks to constant care of the owner of the Ravenglass Dunes, Lord Muncaster, the black-headed colony is yearly increasing. Last Wednesday I found the eggs all well set, which I think is early, seeing that Mr. Saunders puts down 18th of April as date for incubation. But the mildness of the season may have had something to say to this."

A SUGGESTION.

FROM month to month the reader of NATURE NOTES is reminded of the horrors of bird destruction, and that woman, for the adornment of her beauty sometimes—more often of her very plainness—is making to cease and perish from the earth beauty compared with which her own is small indeed. For what, if we can set our mere human prejudices aside, is the loveliest of women compared with such gorgeous and aerial beings as humming-birds and birds-of-paradise? Now, in this April number we have the scorn of "Ouida's" powerful pen to remind us. But what use is it if our feelings are but lacerated from time to time, and there an end? Cannot something practical be done? Societies for the prevention of cruelty to children and animals exist here in England. Why should not a more specialised Society be started amongst us whose *sole* object should be the discountenancing of the wearing of hats containing the plumage of the more rare and beautiful birds, or, indeed, of any birds except poultry? Such a Society should, I think, make children rather than their mothers the principal object of its efforts. The hearts of children, even the children of fashionable parents, are open to good and simple impulses. They have not yet become callous. They are "made of penetrable stuff." As for the heart of the fashionable woman, it is such as beats in the statues of Phidias or Praxiteles. She would be a statue herself, though not often a masterpiece, were she as marble as her heart. To one argument, to one form of appeal only is she open, viz., that feathers are no longer the fashion. And if the boyhood and girlhood of the country grows up contemning them, they will soon cease to be so. Numbers of women, however, other than the fashionable ones pure and simple, strut in their borrowed plumes. *They* will be open to the voice and wish of their children more than to any other influence. To move the children, therefore, is to move the parents. And why should it not be done? Pamphlets could be sent to schools (both girls' and boys'), and the heads of these schools could, perhaps, be enlisted in a movement which, though it must advance education, *could* not interfere with either cricket or football. In this way birds in hats might get to be "*voted*" "bad form" by the children of the country, and then the women of the country, with minds more open to a phrase of the kind than to the most able arguments, the most eloquent appeals, would yield *en masse*. But, though to win the children would be to win the world, the mothers might also be attacked personally. I would suggest that every member of such a Society and every person interested in it should send to its working committee the names and addresses of as many women of his acquaintance (or *her* acquaintance) as were known to wear bird-decked hats. Such women

could then be bombarded with pamphlets, &c.; and I would further suggest that such pamphlets be not headed "A Plea for the Birds," "The Cruelty of Wearing Aigrettes," &c., &c., in accordance with the subject-matter of them; but quite otherwise—say after this manner, "The Coming Hat!" "What Royalty wears," "A Novelty in Dress," and so on. Thus, by "a pious (and most justifiable) fraud" they might get *read*, and the seed sometimes strike root. These suggestions may be crude, perhaps, but they could be improved upon and better worked out. It wants but the beginning.

I must add that when I began to write this I had not read about the Audubon Societies in America. I find, then, that my main idea (I have had it for some little time) is already being carried out in America. Then why not here? Can *we* only *talk*?

EDMUND SELOUS.

Wamil Hall, Mildenhall, Suffolk.

ARBOR DAY.

"ARBOR Day" is American in origin; but, as there is "no new thing under the sun," it is safer to refer its institution to remote antiquity. The Americans probably started it in order to restore the natural forests with which the early settlers had made too free.

It has been said that every man owes three duties to himself and posterity—to beget a son, dig a well, and plant a tree. We are indebted to our ancestors for these necessities of existence, and Arbor Day thus helps a man to fulfil his obligations.

On January 6, 1897, a letter appeared in the *Times* on the cider industry, in which the writer dwelt on the fact that the present generations in Kent were ill repaying the planting enterprise of their predecessors, and suggested the institution of Arbor Day for the double purpose of renovating Kentish orchards and commemorating the long reign of the Queen. The notion struck me as singularly appropriate, and I accordingly advocated its adoption in an article in the *St. James's Gazette*. Consequently, when, through the energy of the author of the suggestion, February 27 was fixed as the date of Arbor Day in the picturesque and ancient village of Eynsford, Kent, where the farmers have recently revived the industry of cider-making, once common in the county, I received an invitation to be present on the occasion in company with Sir George Birdwood, whose interest in everything tending to brighten rural life and restore rural industries is well known. To myself the occasion had special attractions because I was informed that it was the intention of the promoters of the movement to plant a considerable number of the best vintage varieties of apples they

could procure. The revival of the cider industry, which necessarily involves the planting of cider fruit, is a matter the importance of which I have for some years in the press and on the platform endeavoured to impress on the people of this country. Cider is the natural wine of Britain. It is, I am happy to say, rapidly recovering the favour in which it was once held; and, if the demand continues to increase, of which I have no doubt, the systematic renovation of our orchards of vintage fruit must not be delayed.

At Eynsford on the day in question, the school-children planted on a bank opposite their schoolhouse and about the centre of the village various ornamental trees, so arranged that the initial letters of their names spelled the text in Proverbs, "My son be wise," as maple, yew, sumach, oak, and so on. The children themselves subscribed for the cost of the trees, and thus early joined in the commemoration of this remarkable reign. The farmers and cottagers planted fruit trees, chiefly apples; and one villager planted an acre of ground with a selection of vintage varieties. In this new orchard two spaces were left which Sir George Birdwood and I filled up by planting each a tree that had been put aside for the purpose. The situation of the orchard seemed to me to be very well chosen, and I hope that before many years have passed Sir George Birdwood and I may be favoured with a draught of cider made from the fruit of the trees we assisted to plant.

A specially interesting feature of the proceedings was the presentation of a young apple tree to an aged villager named Howard, a name which is suggestive of the days when the southern counties of England were covered with dense woods of oak and beech, in which the inhabitants had rights of pannage, that is of turning in their swine to feed on the acorns and beechmast; for in all probability the name "Howard" is an abbreviation or corruption of Hog Ward. Howard, it appeared, had planted an apple tree so far back as 1839, in an allotment still in his occupation, which turned out a capital and regular bearer, and in that year of plenty, 1895, yielded its owner no less than thirteen bushels of first-class fruit. In order to mark their sense of the old man's forethought, and as an incentive to others to follow his example, the villagers presented him with a young tree of the same variety as the original—a Winter Quoining—to plant in his son's garden. We all assisted or looked on at the operation, and at its conclusion the village children danced seven times round the tree singing the following lines used in former times on such occasions, which Sir George Birdwood, who has a store of folk-lore, had had printed and distributed as a leaflet:—

Stand fast root, bear well top,
Pray God send us a good apple crop.
Every twig, apples big,
Every bough, apples enow,
Hats full, caps full,
Full quarter sacks full.

Probably there is not another allotment holder in the kingdom who can boast of gathering fruit in his allotment from a tree fifty-eight years after planting it; but the circumstance calls to mind a still more remarkable instance recorded by Gilbert White of early planting succeeded by unusual longevity. In 1790, Mr. Marsham of Stratton, near Norwich, writing to White tells him of the growth of trees planted by him at varying dates, and in particular of an oak planted in 1720 which, at the time of writing, measured at one foot from the earth, twelve feet and a half in circumference, and at fourteen feet (the half of the timber length) eight feet two inches. "Perhaps," adds Mr. Marsham, "you never heard of a larger oak while the planter was living."

Now the institution of Arbor Day, one feature of which is the planting by children, would give successive generations a personal interest in the ornamental appearance of their native villages, and, in many cases, a share, as each grew up to manhood, in the profits arising from the produce of the fruit-trees so planted. The institution of a fixed day in each year set apart for tree-planting would as it came round remind us of a duty we owe to ourselves and to posterity, namely, to leave our beloved land a little better, a little pleasanter, and a little more fruitful than we found it. It has been well said indeed that "a stated time is a hedge to duty and often defends a duty from omission." Custom constrains more than law, and if Arbor Day prevailed throughout the kingdom millions of trees would speedily grace the landscape where now the land is bare. It would benefit the nurserymen too—a most deserving class whose craft needs encouragement. Then, numerous as have been the suggestions offered and many as were the axes to be ground in the year of grace, 1897, is there one more truly fitting than the institution of Arbor Day to commemorate our Queen's beneficent reign. A fruitful tree has ever been the emblem of the good and just. How vastly the handiwork of Nature transcends the art of man! How much less inspiring a cold and lifeless statue than a living tree, a thing of beauty, increasing in stature and in favour year by year and bestowing grateful shade on successive generations! The children who take their share in the work of Arbor Day grow up with the trees they plant and thus connect these loving witnesses with the events they intend to commemorate. Moreover, if further grounds in support of the institution af Arbor Day be asked for, there remains one which, prosaic though it be, will, at this period of perpetual dipping into pockets not always too well lined, come home to many—it is *inexpensive* to start with, and even the original small outlay will, in the case of fruit-trees properly tended, be quickly repaid.

I must not omit to mention in bringing these somewhat discursive observations to a close an interesting circumstance which occurred at the village school of Eynsford soon after the celebration of Arbor Day there. It so happened that Her Majesty's Inspector who came to hold the annual examination

of the children was Mr. Holt White, of Bexley, son of the late Mr. Algernon Holt White, the grandnephew of Gilbert White, of Selborne! This gentleman was naturally much pleased with the account of the Arbor Day celebration, and told how his father as a boy in 1820 had planted an acorn, at Clement's Hall in Essex, from which had sprung an oak, in which rooks had built nests some thirty years ago. Mr. Holt White is one of the Vice-Presidents of the Selborne Society, and it is owing to a suggestion made by him that I have written the foregoing pages.

C. W. Radcliffe Cooke, M.P.

THE NIGHTINGALE.

Hark to those notes making night melodious!
'Tis the amorous nightingale piping to his mate.
What trills! What tremors! What sweet-toned flutings
Steal softly on the list'ning ear!
'Tis love's long lullaby.
Now with full-throated quickening raptures
He tells his tale of glowing love,
Now with plaintive melancholy murmurs
'Twixt joy and sadness,
In eddying cadences
He pours forth through the deep'ning night
His untiring song.
Fays and fairies gather
To hear the music:
Entranced
They feel the spell.
'Tis not to man thou singest,
Nor for him thy way thou wingest
From sunny lands afar,
Sweet warbler!
Thy nightly reveries thou holdest
In closest covert hidden,
And darksome dell.
What art thou? Whence cam'st thou?
Who can tell?
Spring's harbinger!
May's chorister!
Love's sentinel!
Spirit of song!
Our Philomel.

T. F. Wakefield.

Richmond, May-Day, 1894.

REVIEW.

Essays on Museums and other subjects connected with Natural History. By Sir William Henry Flower, K.C.B., LL.D., F.R.S., &c. 8vo, pp. xv. and 394. Price 12s. net. (Macmillan & Co., 1898.)

WHILST we must all regret the cause for the "enforced period of restraint from active occupation" to which Sir William Flower alludes in the preface to this work, we cannot but congratulate ourselves on the advantage which accrues to us from his leisure. When a young and promising worker, a Francis Balfour, for instance, is removed by an untimely fate, his surviving admirers may piously collect the scattered papers containing the suggestive opuscula of a recognised master; but how much rather would we that the master should survive, and after long years of active work should himself select and arrange in volume form the essays which we have valued on their former appearance in various journals.

Sir William Flower's volume contains twenty-four essays, which form four groups, seven dealing with museums, eight with general biology, five with anthropology, and four with the lives of his most illustrious contemporary English zoologists. No one can speak with the same authority upon the subject of museum organisation as the Director of the Natural History Museum: indeed we have often thought that, great as have been his services to osteology, Sir William Flower's most lasting monument is to be seen in that entrance-hall of our national museum where he has given us in the central cases one of the most complete object-lessons possible in Darwinian evolution, and in the recesses has planned an equally unrivalled index collection to that comparative anatomy which must ever be the basis of our classification of animals or plants. We live in hopes of seeing in the pages of NATURE NOTES those articles on this *multum in parvo* which were promised in our prospectus more than eight years ago. Meanwhile any members of the Selborne Society who are interested in museums either as custodians or as students will find much in the earlier essays in Sir William Flower's volume of the very highest practical value. As it seems to us very desirable from the point of view of real teaching in natural history, as opposed to mere book-learning, that museums should be multiplied all over the country, we cannot, in spite of the exigencies of our space, refrain from quoting one passage from the first essay:—

"The first consideration in establishing a museum, large or small, either in a town, institution, society, or school, is that it should have some definite object or purpose to fulfil; and the next is that means should be forthcoming not only to establish but also to maintain the museum in a suitable manner to fulfil that purpose. Some persons are enthusiastic enough to think that a museum is in itself so good an object that they have only to provide a building and cases and a certain number of specimens, no matter exactly what, to fill them, and then the

thing is done; whereas the truth is the work has only then begun. What a museum really depends upon for its success and usefulness is not its building, not its cases, not even its specimens, but its curator. . . . "

"He must carefully consider the object of the museum, the class and capacities of the persons for whose instruction it is founded, and the space available to carry out this object. He will then divide the subject to be illustrated into groups, and consider their relative proportions, according to which he will plan out the space. Large labels will next be prepared for the principal headings, as the chapters of a book, and smaller ones for the various sub-divisions. . . . Lastly will come the illustrative specimens."

Again in the essay on Local Museums the author insists on the necessity of an endowment and on the expenditure of "time, knowledge, and loving and sympathetic care" upon a museum.

"'It is not,' he continues, 'the objects placed in a museum that constitute its value, so much as the method in which they are displayed, and the use made of them for the purpose of instruction.'

"The scope of the museum should be strictly defined and limited; there must be nothing like the general miscellaneous collection of all kinds of 'curiosities,' thrown indiscrimately together which constituted the old-fashioned country museum."

Even more directly practical are the suggestions in the paper on "School Museums," whilst that on "Boys' Museums," contains some charming little bits of autobiography; but for these we must refer our readers to the book itself.

As might be expected by any one who has watched the distinguished author's scientific career, the series of essays on general biology deals mainly with the doctrine of evolution. It is pointed out how "the study of morphology has led in succession to the ideas of (1) teleology, or direct adaptation to purpose; (2) type, or common plan; and (3) descent from a common ancestor with modification, according to the great principle of orderly evolution," and this principle is illustrated from the history of hoofed animals as traced through the Tertiary geological period and from the evidence as to the probable origin of whales.

Sir William Flower's contributions to anthropology deal with the physical side of the subject, insisting especially on the importance of the collection of more data as to craniometry and other details of human measurement; but they include, besides the valuable address on the latest classification of the varieties of the human species delivered to the Anthropological Institute in 1885, the interesting Royal Institution lecture on pygmy races and the well-known essay on "Fashion in Deformity as illustrated in the customs of Barbarous and Civilised Races," originally also given as a lecture to that Institution in 1880 and afterwards republished separately. This last article would seem to require a slight modification. It states that: "In Europe tattooing . . . . is confined almost exclusively to sailors"; whereas it has recently been stated that this barbarous custom is becoming fashionable among both sexes of the aristocracy not only in England but also on the Continent.

OUR EXCHANGES.

Report of the Kent and Surrey Committee of the Commons' Preservation Society.—This report shows most commendable activity with reference to numerous threatened rights of way and open spaces. The Committee has already seven local centres, but has unfortunately to complain of frequent apathy on the part of Parish and District Councils.

The Irish Naturalist for May, in addition to several interesting notes, contains an admirable illustrated article on the fructification of ferns, by R. Lloyd Praeger, one of the editors.

The Naturalist for April and May sustains its usual high level of scientific interest.

The Jewish Chronicle for April 20 has, we are pleased to see, a sympathetic article on the Society, with special reference to the wearing of aigrettes.

Humanity for May, and, judging from its pages, the *Morning Post* also, seem unfortunately bent upon dragging questions of religious creed into the subject of humane or inhumane treatment of animals.

Knowledge for May is as variedly interesting as usual. Mr. Enock's admirably illustrated articles on British Bees, the Rev. T. R. R. Stebbing's "Karkinokosm," and Mr. Jennings' Botanical Studies are continued, and Mr. Lydekker gives us a paper on "Deserts and their Inhabitants."

NATURAL HISTORY NOTES AND QUERIES.

Floral Emblems.—If A. M. will look through the *Life of Mrs. Hemans*, it will be seen that Mrs. H., when she was a girl, asked the identical question of Sir W. Scott, and he replied that the passage had no meaning—he only wanted a line to rhyme. I write from memory, but remember the question and answer.

S. E. N.

Caddis-worm.—I am anxious to know the average duration of the life of the common caddis-worm (*Phryganea flavicornis*), and how and where they spend the winter.

BELMA.

Butcher's Broom.—I have two plants of the above side by side in my garden, one from the hedge of a cottage garden in the parish, the other from a garden in Norfolk. The plant from Norfolk has larger leaves than the other, and of a deeper green; the leaves of the other being narrower, more curly, and of a paler and duller green. I hoped, from this difference, that they were male and female plants, and that berries might be looked for; but under a small magnifying glass the flowers seem just alike, though the leaves on which they grow are so different. I suppose them to be male flowers, for I notice in the middle of each a sort of cone of a reddish-brown colour, with a pale yellow tuft or brush at the top, which I take to be anthers with pollen.

I should like to ask, Is the male blossom easily distinguishable from the female? and secondly, is there any noticeable distinction in the general growth and appearance of the male and female plants?

P.S.—If any of your readers should happen to have female plants only, an exchange might perhaps be made to the advantage of both parties.

Otham, Maidstone. F. M. MILLARD.

[The suite of specimens in the British Museum Herbarium show the Butcher's Broom to be a variable plant, and it is stated in *English Botany* (ed. iii.), on the authority of Mr. Worthington Smith, that the cladodes or flattened branches—which, by the way, it is a pity to speak of as "leaves"—are narrower in the male than in the female. There is no external difference in the flowers of the two sexes, the absence of the yellow anthers in the female being the most obvious distinction.—ED. *N.N.*]

A "Cinnamon" Blackbird.—One of the most interesting creatures presented to the Zoological Society for a long time past is a beautiful and strangely-coloured blackbird, just given by Mr. A. J. Lawford-Jones, of the Post Office

Savings Bank. "The bird," says Mr. Jones, "is, of course, the ordinary English blackbird (*Turdus merula*), but is an exceedingly rare variation in colour. It is of the albino type, and has the pink eye of the albino, but is much rarer than the white blackbird of which we hear so much." The colour is practically self-cinnamon, the breast being cream spotted with brown. The bird was taken not long after it had left the nest, on the Wigmore Estate, Holmwood, Dorking, having been entangled in the nets put to protect the cherry-trees. Kept in Mr. Jones's aviary it has moulted its body-feathers, and has reproduced them in identical colours. The little creature, which is a cock, is now in the large western aviary at the Zoological Gardens, the giver believing that with birds of its own or cognate family it would be better off than in his smaller indoor aviaries. Bird-lovers will be very grateful to Mr. Jones for the opportunity of observing this rare specimen, which, as he remarks, he has "by caging saved from the trap or gun of that class of lunatic that makes a practice of potting everything which is rare, or which its limited experience has failed to notice." It is hoped that a hen of a similar character may be found, in order to preserve the variety.

Ducks in Kensington Gardens.—Some time ago there was a paragraph in NATURE NOTES about the wild ducks in Kensington Gardens, so I think, perhaps, the following may interest some of your readers.

This morning as I came through the Gardens I noticed two keepers standing at the foot of a tree that has had its top broken off; there were two or three other men with a ladder and a basket. I saw a man hand something out of the basket to one of the keepers, and presently discovered that it was two little ducks. The keeper carried them to the Round Pond, where the mother duck was swimming about with three young ones: he put them down to the edge of the water, and the two little things were soon swimming along as though they had been on the water for weeks. The mother came to meet them with proud and delighted quacks, but after a few pecks at them seemed to think everything was as it should be. I asked the keeper how the young ducks generally got out of the trees, and he said they drop out and walk to the water. He saw the first three drop—and knowing that the hole in the tree was very deep, got a ladder to see if there were any not strong enough to get out alone. He told me that a duck came all the way from Holland Park, along High Street, Kensington, one morning at 5 o'clock, bringing her brood with her to the Round Pond.

49, *Clanricarde Gardens, W.* ELIS. H. BURLTON.
April 11, 1898.

New Edition of White's Selborne.—Mr. John Lane is preparing for publication in the autumn a new edition of Gilbert White's *Natural History of Selborne*. It is to be edited by Mr. Grant Allen and illustrated by Mr. Edmund H. New, with drawings of Selborne and its surroundings, and of White's favourite birds and beasts. Mr. New's illustrations to Mr. Lane's edition of *The Compleat Angler* will be fresh in the recollection of readers of NATURE NOTES.

British Dragon-flies.—Mr. Upcott Gill, of 170, Strand, proposes to issue a handbook to the *British Dragon-flies*, by W. J. Lucas, B.A., with coloured plates, at 10s. 6d. to the first 200 subscribers.

Phenological Observations.—Few subjects are more interesting to British naturalists than the distribution of rare forms throughout the country, and in no way can we follow more closely in the footsteps of our master than in recording the first appearance of birds, insects or flowers. Local circumstances and the variability of our climate, however, render most isolated observations of this kind of little value, and the space available in NATURE NOTES is wholly inadequate for them. We would suggest, therefore, that our correspondents should furnish themselves with Dr. Roberts' *Naturalist's Diary* (Swan Sonnenschein) as a guide to the more useful species to observe, and after ten years' observations should send us an account of the characteristics of their locality with a list of extreme and average dates.—EDITOR *N.N.*

Exchange of Minerals and Rock Specimens.—The Rev. C. Casey, of Grianan, Princess Road, Bournemouth West, wishes to exchange with any other member.

Whitethorn.—The Rev. F. M. Millard, of Otham, Maidstone, sends, under date of April 13, samples of two varieties of the whitethorn or hawthorn (*Crataegus Oxyacantha*), the difference between which is, as he says, very well marked, no intermediate forms having been seen. The one, which was already showing buds on April 13, has more distinctly stalked, more rounded, less indented or serrated, and more glossy, leaves. This would appear to be var. *oxyacanthoides* (Thuill), which is further characterised by its shining leaves being almost of the same colour on both sides and having their irregularly-toothed lobes directed forwards; by its peduncle, or flower-stalk, and calyx being usually smooth, and the teeth of the latter "triangular-acuminate"; by its oval fruit and two or three styles, which, being persistent, are readily seen projecting from the depression surrounded by the withered calyx at the summit of the ripe fruit or "haw." The other, with nearly stalkless, less glossy, much cut and toothed leaves, with more spreading, acute lobes, toothed at their ends but not at their sides, pale green underneath and with prominent lateral veins, is probably the more common var. *monogyna* (Jacq.), which is further characterised by the flower-stalk and calyx being usually downy, the calyx-teeth "lanceolate-acuminate," both flowers and fruit smaller, the latter sub-globose, and the style single. It is generally the later of the two forms, being said in Switzerland to blossom fifteen days after *C. oxyacanthoides*. In his valuable *Flora of Berkshire*, recently published, Mr. Druce says that neither the hairiness of the calyx or the mere degree to which the leaves are cut affords constant criteria for separating these two forms; but there are amply sufficient characters besides these, as we have just seen. Two other varieties are enumerated as British in the latest edition of the *London Catalogue*, viz., *C. laciniata* Wallr. and *C. kyrtostyla* (Fingerhuth). The former of these seems, says Mr. Druce, to be made up of cut-leaved forms of *C. oxyacanthoides* and *C. monogyna*, especially *C. monogyna*. *C. kyrtostyla* has its leaves smooth on both surfaces or hairy on the veins on the under surface, and, perhaps, generally deeply three-lobed—its flower-stalk and calyx hairy and its fruit large and oblong, with one short reflexed style. It has not as yet been recorded from many localities, but is a form for which our members may well be on the look out.

NEWS FROM THE BRANCHES.

Bath.—The summer programme of this active Branch contains eight rambles and excursions. On April 2 a visit was paid to Warleigh Woods, near Bathampton. On May 2 tea was kindly provided at Claverton Lodge by Mrs. Ashworth Hallett. The programme includes a whole day visit to Stonehenge on July 23.

Hatfield Hyde (Junior) Branch.—During the winter various short lectures have been given, and with the advent of Spring Saturday walks have been begun again. A commendable care of birds' nests and a real interest in watching the progress of egg-laying, hatching, &c., is noticeable in the elder children, since this time last year. A due regard for even the commonest wild flowers is also being taught. Some sad and noticeable facts about last spring were the smallness of the numbers of all the swallow tribe and the almost total absence of corncrakes. The same is the case again this year. At one time kestrels used to be seen frequently and sparrow-hawks occasionally. Now the former are seldom, the latter never seen, probably from the usual cause. Doubtless individuals among birds of prey are harmful, whilst others of the same kind are harmless, as well as beneficial. Could not keepers be induced to distinguish between them? Great ignorance prevails as to the usefulness of our smaller birds which so far outweighs any harm that they do; and there seems to be a forgetfulness of, not to say ingratitude for, the beauty of their song, the brightness of their notes, and the cheeriness of their presence. There is now annually a plague of flies in one or two houses owing partly to the muck which is brought down from London. For killing our native small birds which would keep under these pests, the people of the district are themselves to blame; but at whose door are we to lay the fault of decimating the swallows and martins? Is it the Frenchmen? Or is it due to inclement weather at the time of migration which prevents a far northward progress? Perhaps it is owing to both. Much time

has been spent in examining and obtaining specimens from the sandpit, and by the kindness of an anonymous donor the necessary sum for obtaining a museum cupboard has now been made up. The managers of the Hatfield Hyde Church of England School have kindly given their consent to its standing in the school. In filling the museum due care will be taken not to injure or annihilate any rare animal or plant. Specimens will only be taken if they can be got without harm or danger to the continuance of the species.

By the time that this is in print the expected visit of the Geologists' Association, together with the Hertfordshire Field Club and a Bedford Club will, it is hoped, have been paid to the sandpit, and larger knowledge of its contents doubtless gained by the members of our Branch. The specimens from the various beds are now kept apart, and will in time, perhaps, be studied systematically. Notes on all subjects are taken down once a week by four assistant secretaries from the lips of those children who have observed anything worth recording. In conclusion it must be mentioned that by dint of much patience and perseverance the General Fund was at last increased sufficiently to allow of those members who did not go last year being taken to the Natural History Museum, South Kensington. Several of the galleries, notably the Animals' and Birds', were examined as thoroughly as time would allow. The lessons learnt sank deep, and the day was a happy one.

NATURE NOTES goes round monthly and is read with interest.

SELBORNE SOCIETY NOTICES.

BRANCH PAYMENTS FOR 1897.

	Payments for Magazines.	*Contributions.*
Bath	£4 1 8 (part year)	
Croydon and Norwood ...	4 0 8½	£1 0 9
Selborne and Liphook ...	2 7 8	...
Sutton	3 0 0	...

Field Club Saturday Rambles:

June 4.—Whyteleafe to Coulsdon Common and Station (see p. 56 Walker Miles' *Field-Path Rambles round Croydon*). Victoria, 2.35; East Croydon, 3; (London Bridge, 2.25, and change at East Croydon). Book to Upper Warlingham (L.B. & S.C.). Return from Coulsdon (S.E.R.), 8.4.

June 18.—Leave Theydon Bois Station on arrival of 2.41 train from Liverpool Street. Thence by Ambresbury Banks to Copt Hall Green, where tea at about 5.30. Day return tickets, 1s. 4d. Guide, Mr. Wattson.

July 2.—Uxbridge to Denham by the river Colne and Canal. Meet at Uxbridge Station on arrival of 3.35 train; Paddington, 2.50; Willesden, 2.40 (change at Southall); Ealing, 3.6. Guide, H. Ravenshaw.

Council and Committee Meetings:—

The next meetings of the Council will be held on June 7 and July 5 at 5.30; of the Magazine and Leaflet Committee on June 21 and July 19 at 5.30.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 34, Argyll Mansions, Addison Bridge, London, W.; letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W.

Nature Notes:
The Selborne Society's Magazine.

No. 103. JULY, 1898. Vol. IX.

SELBORNIANA.

Annual Report for 1897.—The Council of the Selborne Society has pleasure in presenting to the members its Report for the year 1897.

Mr. James Britten's connection with the Society's magazine, Nature Notes, ceased after the issue of the December 1897 number, when Mr. J. L. Otter kindly consented to undertake the editorship, pending the appointment of a permanent Editor. The Council has been fortunate enough to secure the valuable services of Professor G. S. Boulger for this post. On Mr. Britten's resignation the Council took the opportunity of testifying its appreciation of his work on behalf of the Society, by passing a unanimous vote of thanks to him for his services as Editor of Nature Notes.

The leaflets entitled "A Plea for the British Butterfly," written by Mr. W. F. Kirby at the request of the Council, and "The Cruelty of Wearing Ospreys," by Mrs. Litchfield, have been reprinted, the cost of the latter being met by a donation kindly contributed by the Rev. H. E. Luxmoore for the purpose. A special fund, the Magazine and Leaflet Fund, has been set apart for this branch of the Society's work. The attention of the members is also called to the excellent leaflets on birds issued by the Board of Agriculture, copies of which can be obtained on application.

An International Congress on the Protection of Birds was held at Aix-en-Provence, on November 9, under the auspices of the Ligue Ornithophile Française. The protection of insectivorous birds useful to agriculture was the chief matter treated of, and it was decided to forward to the Governments of Europe through the French Minister for Foreign Affairs the resolutions which were formulated. Public Educational Bodies were also to be memorialised in order to obtain, if possible, the serious consideration of this important subject by schoolmasters and Government School Inspectors. Numerous French and Italian Agricultural, Horticultural, and Sporting Societies were represented at the Congress. Mrs. F. E. Lemon, honorary secretary of the Society for the Protection of Birds, attended as a delegate from the Selborne Society.

The Society's Field Club organised last season a series of rambles. For details of the places visited the members are referred to the magazine. A whole day excursion to Selborne formed not the least enjoyable part of the year's programme. Among the members taking a prominent part in this excursion was the late Prebendary H. D. Gordon, by whose death the Society is deprived of a vice-president whose loss will be deeply felt.

The Council is indebted to several of the members for additions to the collection of lantern slides which is being formed, and for several valuable additions to the library. Amongst the books received are some from the collection of the late Prebendary Gordon, presented to the library by Mrs. Gordon through Miss Martelli.

A number of very successful lectures have been given on behalf of the Society during the year. The Council is greatly indebted to those gentlemen who have so willingly given their services, and as the number of lecturers at present available is insufficient to meet all the applications received, the names of any members willing to speak and lecture, especially out of London, will be gratefully received. The following is a list of some of the gentlemen who have kindly assisted the Society in this direction ; Mr. F. W. Ashley, F.Z.S., the Rev. H. E. U. Bull, M.A., Mr. J. S. Cooke, F.L.S., F.G.S., Lieut.-Colonel Coulson, Mr. Alfred T. Dymes, Mr. Edward A. Martin, F.G.S., Mr. J. L. Otter, Mr. Gerald Renshaw, Mr. James Saunders, Mr. R. Marshman Wattson and Mr. A. A. P. Wire, M.C.I.S.

A scheme has been inaugurated which will, it is thought, be of considerable use in bringing together members of this Society. Many of our members, with the exception perhaps of those who join the Field Club rambles, never have an opportunity of meeting members of other branches. It has now been arranged that a member who intends to spend a holiday in a locality in which a branch is situated, can on application to the Secretary of the Society, obtain a letter of introduction to the Branch Secretary. This would have the double effect of stirring up the branches and of giving the visitor an interest in his holiday which could not otherwise be obtained. The Branch Secretary would no doubt be pleased to make the acquaintance of members of other branches, and he would be in a position to point out to the visitor the objects of beauty and interest in his neighbourhood, and the mutual exchange of views consequent on such an introduction would be beneficial to both parties. In the case of those districts where there is at present no branch of the Society, it is proposed that a list be compiled of members residing therein who shall be willing to act as the branch representative, their work being to point out to members visiting their districts, the local objects of interest and to furnish such other information as may be in their power, in order to render the visit both useful and enjoyable.

The members will be glad to learn that the appeal in the magazine contributed materially to the success of the movement for the acquisition of Churchyard Bottom Wood, Highgate.

A proposal has been put forward by Mr. R. Marshman Wattson, to increase the amount of the branch contribution to the general funds of the Society. The present rule is that 10 per cent. of the receipts from subscriptions shall be paid over towards the general expenses. The proposal is to increase the contribution to 1s. for subscriptions of 5s. and upwards. It has been decided, however, that the consideration of this question shall be postponed and a special General Meeting will be hereafter called for this purpose, after the Branch Secretaries have had an opportunity of giving their opinion.

In conclusion the Council desires to thank those members who gave donations towards the reduction of the deficit on the account presented at last year's annual meeting. It is, however, pointed out that the response to that appeal for special donations has not quite met the needs of the case. Not only is it necessary to clear the Society of debt, but funds are also urgently required to carry on its work efficiently.

For further details of the work of the branches and of the general work of the Society, the members are referred to the pages of the magazine.

General Fund

Receipts.

	£	s.	d.
To Annual Subscriptions for 1897 less those paid over to Branches (15s.) received	108	8	6
,, Arrears of Annual Subscriptions received	0	7	6
,, One Life-subscription received	5	5	0
,, Donations towards the deficit received	45	10	6
,, Percentage on Receipts of Branches for 1897 received	29	1	10
,, Amount for copies of "Nature Notes" sold to Branches in 1897 received	100	1	6
,, Arrears in respect of previous sales of copies of "Nature Notes" to Branches received	39	2	4
,, Miscellaneous Receipts	1	4	5
,, Debts due to the Society in respect of 1897 and not paid on May 1, 1898, namely:—			
(*a*) From Branches for copies of "Nature Notes" £32 19 1			
(*b*) From Branches for percentage in their receipts and from other sources estimated at 17 2 11			
	50	2	0
,, Stock of Badges in hand valued at	5	0	0
,, Balance	92	19	0
	£477	2	7

Expenditure and Liabilities.

	£	s.	d.
By Balance from 1896 account	153	11	4
,, Rent paid	15	15	0
,, Salary of Secretary paid	25	0	0
,, Postage paid	12	10	0
,, Stationery paid	3	4	0
,, Expenses of Annual General Meeting paid	13	12	4
,, Cost of Badges paid	5	4	0
,, Miscellaneous Expenses paid	6	5	0
,, Printing paid	30	5	3
,, Due to Bale, Sons, & Danielsson, Ltd., for "Nature Notes," and for postage thereon	211	15	3
	£477	2	7

Magazine and Leaflet Committee.

	£	s.	d.
To Donations received and Sale of Leaflets	4	3	2
	£4	3	2

	£	s.	d.
By Balance due to Hon. Secretary	0	0	2½
,, Printing	1	15	0
,, Postages and Sundries	0	12	3
,, Balance	1	15	8½
	£4	3	2

May 1, 1898.

J. L. Otter,
Hon. Treasurer.

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Wolmer Forest.—We can congratulate the Guildford Natural History and Microscopical Society on having practically achieved the object of their memorial to the War Office on the making of Wolmer Forest a sanctuary, to which we alluded on p. 21. The secretaries have kindly forwarded to us a copy of a letter from the War Office adopting the opinion previously expressed by the Commissioners of Woods and Forests. This letter encloses a report from Captain A. H. Cowie, R.E., Hon. Sec. of the Aldershot Game-Preserving Association—an officers' shooting association—the main points of which are as follows :—(1) Since the Association took over the management of the forest in 1895, all birds have been strictly protected; (2) no birds, except game birds, have been allowed to be shot ; (3) all hawks,

owls, and other birds, have been carefully preserved as far as possible. The heronry has gradually increased from one nest a few years ago, to about twenty nests now, and nearly fifty young herons flew from the nest in 1897; (4) foxes also are strictly preserved; (5) but the preservation both of birds and animals is carried out with extreme difficulty owing to the destruction carried out by the gamekeepers on private land all round the forest. In Captain's Cowie's opinion, to make the preservation a success a large area round the outskirts of the forest should be included in the scheme for protection. For instance, hobbies and hen-harriers have visited the forest during the last three years, but their lives are not safe outside the forest. In conclusion, Captain Cowie states that his Association will take every means in its power to carry out the suggestions in the Guildford Society's memorial. Whilst every Selbornian must rejoice in this result, so far as one of Gilbert White's chief haunts is concerned, it would seem highly desirable that our local members should endeavour to emulate the example of Mr. E. N. Buxton and his neighbours who have formed the Epping Forest Bird Protection League, to extend the area of the bird sanctuary over estates adjoining the forest.

Osprey Plumes to be abolished in the Army.—Sir J. Lubbock asked the Under Secretary for War, on June 23, whether he was aware that the so-called osprey feathers worn as plumes by certain regiments were only developed by, and were stripped from, the birds during the breeding season; and that the destruction of the old birds involved the starvation of the young ones; and if he would consider the desirability of abandoning the use of a decoration which involved the slaughter of birds under circumstances now shown to involve such cruelty. Mr. Brodrick replied: "Orders have been given that plumes composed otherwise than of so-called 'osprey' feathers shall be prepared with a view to obtaining the sanction of Her Majesty to the abolition of the 'osprey' plumes worn by the commissioned officers in certain regiments. The selection of a satisfactory substitute is difficult, and some delay may occur in effecting the change."

Conference on Preservation.—We are delighted to learn that a most representative conference of members of both Houses of Parliament and others was held under the chairmanship of the Right Hon. James Bryce, on June 23, to consider the desirability of some permanent arrangement for concerted action for the protection of rural scenes, commons, places of historic interest, &c. The chairman mentioned that during the last few years there had been a growing sense of the desirability for making provision in the interests of the public for the preservation of open spaces and commons, and not a less remarkable desire for preserving all objects of beauty and everything with

historical associations. These tendencies had given rise to the formation of a considerable number of societies, and to some it had occurred that it would be well to associate together for common action. Happily they were interested irrespective of political party, and his experience of such discussions in the House was that they had been treated quite apart from political relations. It was resolved:—"That it is desirable to make some permanent arrangement for concerted action between Members of Parliament in both Houses, on questions relating to—(*a*) the protection of rural scenes and landscape and town prospects, from such disfigurement or impairment as is not justified by considerations of public utility; (*b*) the provision and maintenance of commons, open spaces, public parks and gardens; (*c*) the preservation of buildings and places which are of peculiar interest by age, beauty, or association, whether historical or literary; (*d*) the conservation of wild animals and plants and generally for asserting the importance on broad grounds of public policy of maintaining beauty, simplicity, dignity, and interest in the aspect of out-of-door Britain." It was further agreed, on the motion of Sir Robert Hunter, to communicate with the secretaries of the Commons Preservation Society, the Metropolitan Gardens Association, the Wild Birds Protection Society, the Kyrle Society, the Selborne Society, the Society for the Protection of Ancient Buildings, the Society of Antiquaries, the Society for Checking the Abuses of Public Advertising, and the National Trust.

Hampstead Heath.—Mrs. Ernest Hart writes to the *Daily Chronicle* of June 24, urging the desirability of securing the beautiful estate of Golders Hill, the property of the late Sir Spencer Wells, as an addition to Hampstead Heath, and mentioning the valuable promises of money contributions to that end secured by her late husband. We need hardly say how thoroughly we wish success to this proposal.

Big Game in Africa.—We believe we are right in saying that the area over which "big game" of all kinds is to be found in Africa has within the last half century been so curtailed as to be but a small fraction of what it was, and that many beautiful species of antelope have become rare if not extinct. This process of extermination is likely to go on even more rapidly than heretofore if "sportsmen" are going to follow the example of Mr. Seton-Karr. We have received a card stating that "Mr. Seton-Karr made the following bag in a six weeks' shooting expedition in Somaliland. This is given as a specimen of an average bag: 5 elephants, 2 lions (male), 8 leopards, 2 wart hogs, 11 great spotted hyænas, 7 striped hyænas, 4 oryx beisa antelope, 10 awal antelope, 2 common gazelle, 2 bottlenose antelope, 2 gerenuk antelope, 1 lesser koodoo, 18 dig-dig antelope, besides birds. On the next trip

much the same bag was made, except that no elephants were shot, and only 2 panthers or leopards, but two rhinoceros were obtained; also some klipspringer and Clarke's gazelle and hartebeeste. Others have shot zebra by crossing the Shebeyleh or Leopard River."

How does this wholesale slaughter of anything and everything distinguish itself as sport from the action of the Cockney gunners on Sundays and bank-holidays, in the fields round the metropolis? We notice that Mr. Seton-Karr has written to a contemporary that he gives place to no one in his "love of all dumb animals"; but in that case we can only reply on behalf of those dumb animals, "Save us from our friends." When Mr. Seton-Karr goes on to speak of "God-planted instincts of the chase" which he claims to possess "in common with all carnivorous creatures," we feel tempted to ask whether it was hunger that prompted him to shoot rhinoceros and hyænas.

"ANOTHER PETITION FOR OUR CAGED BIRDS."

THE *pros* and *cons* on the subject of caged birds are so numerous that I feel it is somewhat futile to raise another plea in defence of such captives; and the endeavour (such as I would make), viz., to obtain legislation for the prevention of any birds being kept in captivity will very likely meet with universal objection, but may I beg for a small space in NATURE NOTES in which to ask the opinion of any member of the Selborne Society who may be interested in this matter?

There is no doubt that many of us derive great pleasure from the keeping of such pets. Certainly those birds which are *bred* in cages have less need of our sympathy than those victims which are caught annually by the bird-trappers. These are the ones that I especially plead for.

The cruelty of the snaring and the sight of the birds displayed later on in the bird-fancier's window have often set me wondering if a league against the custom of keeping captive birds could not be started, which might have the ultimate aim of obtaining helpful legislation on the subject. Who would not willingly give up his, or her, pet canaries in order to free the less fortunate and more closely confined prisoners who live out their little lives hopping unceasingly up and down, round and round, on a single perch, in the tiniest and most miserable of little cages.

Limited space naturally forbids much freedom for birds put up for sale. One cannot enter a shop and accuse the dealer of cruelty. One may, perhaps, purchase two or three of these

birds in order to release them, or to cherish them in larger and more comfortable quarters at home, forgetting meanwhile that by such acts the trade is getting a profit and that one is innocently the cause of the capture of several more birds.

The decrease of many of our rarer birds is, I think, greatly owing to the ever-increasing bird trapper. I can speak from experience of a spot in England where it was a common sight, eight or nine years ago, to see large flocks of goldfinches, where now it is the rarest occurrence to see *one*. The same thing may be said of several other species. The constant snaring that is carried on must in a great measure account for this. I have been told that the number of birds which die before they can be sold necessitates the capture of a great surplus. When we reflect on the vast amount of caged birds seen everywhere we find the trade must be enormous.

This reflection compels us to look at the subject also from the trader's point of view, and it is in this that the before-mentioned proposition meets with a difficulty. Whether or not it is one that could be overcome, I now leave to be answered by any Selbornians who may like to give an opinion or welcome advice to one who has the subject greatly at heart, and who is a

LOVER OF LIBERTY.

WITH THE BLACK-HEADED GULLS IN CUMBERLAND.

THERE is no part of the Cumberland coast so full of witchery and fable as the point where Muncaster Fell comes down to the sea. The rivers of Irt, Mite and Esk, with their memories of the pearl-fisheries of olden time, swirl down toward the ancient harbour of the mythic "King Aveling's Town." One cannot look across the pool at full tide without thought of how the Vikings pushed their ships ashore here, when they came from Mona's Isle to harry Cumberland.

But the sound of earlier civilisations is in our ears as one gazes across the Ravenglass sand-dunes; for here beside us is the great cavern of ancient oaken-bogs and earth, wherein the Cymri buried their dead in prehistoric time, and there within a stone's throw still upstands the seaside residence of some great Roman general, who was determined apparently to enjoy a well-heated house, and to do honour to the *genius loci*. No one who visits "Walls" Castle, as it is called, but must be struck with the remains of the "tepidarium," and the little niche that held the statue of the tutelary god or bust of the presiding Cæsar within the ample hall.

Away at our back rises the Muncaster Fell with its grey beacon-tower, its herd of deer, its wind-blown oaks, its primrose and bluebell haunted woods, that slope towards the Vale of Esk. Further inland, sheltered by its magnificent wall of forestry, stands rose-red one of the most interesting of our northern castles, with its long terrace-lawn of quite unequalled grace and loveliness. There in sheltered combe the rhododendrons bloom from earliest spring, and the air will to-day be honeysweet from laurel-flower far and wide.

But I was bent on seeing an older people than Cymri, Roman, Viking, or Castle-Lord, albeit the line of Pennington reached far into the past, and suited well his ancient castle hold. I had come in the last week of April, by courteous invitation, to make the acquaintance of that fast-growing colony of black-headed gulls that make the dunes of Ravenglass famous.

A boat was called, and leaving the pebbly beach that "Stott of Oldham" so delights to paint, we rowed across the flooding tide of the Ravenglass harbour to the sand-dunes of happy quietude where the oyster-catchers were sunning themselves, and the sheldrake in her nesting season loves to hide. As one went forward over the dunes one felt back in the great desert of the Badiet-Tih, and expected to see Bedouins start from the ground, and camels come in single file with solemn sway round the sedge-tufted, wind-blown hillocks and hummocks of glaring sand.

Then suddenly the silence of the waste was broken by a marvellous sound, and a huge cloud of palpitating wings, that changed from black to white and hovered and trembled against the grey sea or the blue inland hills, swept by overhead. The black-headed gulls had heard of our approach, and mightily disapproved of our trespass upon their sand-blown solitude.

We sat down and the clamour died: the gulls had settled. Creeping warily to the crest of a great billow of sand, we peeped beyond. Below us lay a natural amphitheatre of grey-green grass that looked as if it were starred with white flowers innumerable. We showed our heads and the flowers all took wing, and the air was filled again with sound and intricate maze of innumerable wings.

We approached, and walking with care found the ground cup-marked with little baskets or basket-bottoms roughly woven of tussock grass or sea-bent. Each casket contained from two to three magnificent jewels. These were the eggs we had come so far to see. There they lay—deep brown blotched with purple, light bronze marked with brown, pale green dashed with umber, white shading into blue. All colours and all sizes; some as small as a pigeon's, others as large as a bantam's. Three seemed to be the general complement. In one nest I found four. The nests were so close to one another that I counted twenty-six within a radius of ten yards; and what struck one most was the way in which, instead of seeking shelter,

the birds had evidently planned to nest on every bit of rising ground from which swift out-look over the gull-nursery could be obtained.

Who shall describe the uproar and anger with which one was greeted as one stood in the midst of the nests? The black-headed gull swept at one with open beak, and one found oneself involuntarily shading one's face and protecting one's eyes as the savage little sooty heads swooped round one's head. But we were not the only foes they had had to battle with. The carrion crow had evidently been an intruder and a thief; and many an egg which was beginning to be hard set on had been prey to the black robber's beak. One was being robbed as I stood there in the midst of the hubbub.

Away, for what seemed the best part of a mile, the "gullery" stretched to the north in the direction of Seascale; and one felt that, thanks to the public-spirited owner of the sea-board, and the County Council of Cumberland, the black-headed gull was not likely to diminish in this generation.

Back to the boat we went with a feeling that we owed large apologies to the whole sea-gull race for giving this colony such alarm, and causing such apparent disquietude of heart, and large thanks to the lord of Muncaster for his ceaseless care of the wild sea-people whom each year he entertains upon his golden dunes.

THE DESTRUCTION OF WILD BIRDS' EGGS.

THE Act prohibiting the taking of eggs at this season, as far as this district is concerned, seems to be practically a dead letter. In my daily walks I have only once seen one of the bills setting forth the penalties for taking eggs, and that was not in the most conspicuous position. Only last Sunday evening I found a boy with his cap full of thrushes' and blackbirds' eggs, and holding in his hand four nightingales' eggs—these latter far advanced in incubation. He had never heard of the pains and penalties involved in taking these, and it was impossible to impress on the youthful mind (aged 12) the wanton destructiveness of his actions.

To be really at all effective one of the bills should be posted at the principal entrances of every wood and plantation, and attached to (not pasted round) every signpost in the county in a permanent fashion akin to a County Council notice board. The village school, National, Church or Board, should have framed bills hung up both inside and outside the building, for the instruction of the scholars. Prevention is better than prosecution: besides the village constables think it rather beneath them (as indeed it is) to arrest or summon an urchin

for the offence, and it would probably bring them into unpleasant contact with the older inhabitants. Of course the action of egg-stealing becomes a serious crime when the eggs are partridges or pheasants, although the distinction is more real than apparent.

I would urge upon all societies which have the protection of bird-life at heart the necessity of making the Act a real force in preventing the wholesale destruction of eggs. It is too late this year to do anything, but much could be done in readiness for the close season of 1899.

W. B. GERISH.

Hoddesdon, Herts.
June 1, 1898.

REVIEWS AND EXCHANGES.

Garden-making.—Suggestions for the Utilising of Home Grounds. By L. H. Bailey. The Macmillan Company, New York. Pp. 417, 8vo. Price 4s. net. With 256 Illustrations. (The Garden-Craft Series.)

THIS is one of several eminently practical, scientifically accurate, and at the same time, racily interesting books for which we are indebted to Professor Bailey. He has called to his assistance several most competent specialists, and the result is a pocket manual from which every gardener will learn much, though its garden calendars are drawn up with reference to the United States. Of the many excellent illustrations, perhaps those in the section on landscape-gardening are the most valuable, as they at once teach the desired lesson of good taste; but the numerous designs of tools and what we term "Yankee notions" in the earlier part of the book are also most suggestive. We hope our English horticultural implement-makers will look at this little volume.

The Pruning-Book: A Monograph of the Pruning and Training of Plants as applied to American Conditions. By L. H. Bailey. Pp. 537. Price 5s. net. With 331 Illustrations.

THIS is another volume in the same series, by the same author, which should make our French friends, whom we have always considered our guides on such topics, look to their laurels. Dealing, as it necessarily does, mainly with an artificial system of treatment to increase the productiveness of fruit-trees or to remedy injuries which are too often the result of the neglect or maltreatment of trees, the subject is a painful one to the Selbornian; but Professor Bailey is a learned and humane physician who gives good physiological reasons for his advice,

and in many cases would convince the veriest dendrolater, if we may coin the word, of the necessity for the knife, the saw or the shears. He admits, however, that many pruners "have mistaken their vocation: they are carpenters." A quarter of the book is devoted to American vine-culture.

Birds in London. By W. H. Hudson, F.Z.S. Illustrated by Bryan Hook, A. D. McCormick, and from photographs from nature by R. B. Lodge. Longmans, Green & Co. Pp. 340, 8vo. Price 12s.

London, though vast as a city, is comparatively small geographically. Though it has twice as many human inhabitants as Yorkshire, the largest of English counties, it does not cover an area equal to that of Rutland, the smallest. Neither

London Crows (*by Bryan Hook*).

is it at all easily defined as an area. If then, either Mr. Hudson or we ourselves occupied a narrowly scientific standpoint, or were concerned even mainly with the mere cataloguing of the birds which have been, are, or may be observed within the London area as a matter of geographical distribution, we should be inclined to differ from him in styling the list of some

fifteen or sixteen books and articles dealing with his subject, which he gives on p. 330, "an exceedingly meagre one." Fortunately for us, however, this is by no means Mr. Hudson's only purpose; so that, in spite of these previous works, we feel when we have read it that we could ill spare the charming volume of essays that he has given us—essays, by the way, which have not, as is so often the case now-a-days, appeared elsewhere before being issued in book form.

Judging from the familiarity with the bird life of our open spaces which he exhibits, Mr. Hudson would seem to be as much at home in London as in La Plata, and all who have been fascinated with the style of his earlier works will know that in

Dabchick on Nest (*from a photograph by R. B. Lodge*).

this work they have a treat in store. The author, too, has been ably assisted by his illustrators, the book containing seventeen plates and fifteen illustrations in the text. By the kindness of the publishers we are able to give a specimen of the latter by each of the three artists.

Mr. Hudson's general conclusion is that the comparative abundance and variety of wild bird life in the different open spaces depends on the degree of protection and encouragement the birds receive, and we fully endorse everything he says in support of this conclusion, as to the mistakes of the Hyde Park authorities in sacrificing every carrion crow for the sake of their very numerous ducklings, and in thinning these latter with

the gun. It is sad to be reminded of the cutting down of seven hundred trees, mostly elms, in Kensington Gardens in 1880, which entailed also the loss of the last rookery of inner London; but as a countervailing gain we are told of the increase of our wood-pigeons, and of the moor-hen, and the dab-chick. In fact, as Shirley Hibberd wrote in 1865, "London is far richer in birds than it deserves to be." Mr. Hudson states that "the number

FIELDFARES AT THE TOWER (*by A. D. McCormick*).

of dogs in London is supposed to be about two hundred thousand," and "that there are certainly not less than half a million cats," of which he estimates that eighty thousand to one hundred thousand are ownerless. This, of course, accounts for a great destruction of wild birds in our parks and squares; and the

author suggests that these cats should be removed by the police and mercifully destroyed, calculating that to the 40,000 unclaimed dogs destroyed in 1896, 60,000 or 70,000 cats would be added in the first year. Another practical suggestion which he makes is that the County Council should plant some rushes by the Hampstead ponds so as to encourage water-fowl to nest.

A considerable part of the work is occupied by a detailed account of all our London open spaces and an appraisement of their avian peculiarities. We can only quote what is said of Churchyard Bottom Wood:

"The wildest and most picturesque spot in North London, with an uneven surface, hill and valley, a small stream running through it, old unmutilated trees of many kinds scattered about in groups and groves, and everywhere masses of bramble and furze. It s quite unspoiled, in character a mixture of park and wild rough common, and wholly delightful. Indeed, it is believed to be a veritable fragment—the only one left—of the primæval forest of Middlesex. It is earnestly to be hoped that the landscape gardener will not be called in to prepare this place for the reception of the public."

As we have said, we do not criticise this delightful volume from the scientific standpoint, but we wish Mr. Hudson would add a list of the species of the district. While we write, Mr. Philip Gosse records an addition—the brambling—from Maida Vale.

Our Animal Friends for May and June are as good numbers as ever. The former, in addition to an article, "A Law for the Protection of Birds," which we shall reprint, has one entitled, "Can Parrots Reason?" which we should like also to reproduce; and the latter, one on vivisection, exhibiting a moderation in tone which some of our contemporaries would do well to imitate.

From the Massachusetts Audubon Society we have received an excellent budget of leaflets and tracts, *A Word for the Owl*, *To Save our Birds*, and *Helps to Bird Study*. This last contains a short memoir of Audubon, several extracts in prose and verse from Ruskin, Thoreau, Stevenson, Sir Edwin Arnold, John Burroughs and others, an illustrated article on "How to Draw Birds," and another on "The Parts of a Bird."

The Victorian Naturalist: the Journal and Magazine of the Field Naturalists' Club of Victoria, is a thoroughly scientific journal, containing the record of much solid local work and descriptions of species new to science.

The Naturalist for June, besides its usual purely local and scientific records, contains an interesting list of Lincolnshire plants, dating from 1724 and 1726, and a remarkable article on "The Chemistry of Lakeland Trees," by Dr. P. Q. Keegan.

We cannot altogether sympathise with Mrs. Tatlow's endeavours to cultivate rare British orchids in her garden, as described in *The Irish Naturalist* for June; but we congratulate the "Easter party" on their "Impressions of Achill," and the Journal on its excellent classified "Notes."

Knowledge for June, among other articles, contains one on "The Mourne Mountains," by Professor G. A. J. Cole, one on "Africa and its Animals," by Mr. Lydekker, and a continuation by Mr. J. R. Jackson, of Kew, of his "Economic Botany."

NATURAL HISTORY NOTES AND QUERIES.

Cream Squirrel.—While walking by the Shadwell Forest on the Harling Road, in the month of June, my attention was attracted to a big oak tree where a "cream squirrel" and three brown ones were feeding on oak apples: when I moved they dropped their oak apples and scampered off.

Thetford. W. SPARROW.

A Time-limit for the Origin of a Race.—*The Journal of the Linnean Society: Zoology*, vol. xxvi., contains a most interesting account by Mr. H. L. Jameson, of a race of house mice, rufous-grey above and pale buff beneath, inhabiting the sand-hills of the North Bull, which first appeared above water about a century ago. Gradations occur between this race and the normal black-grey mouse, and the former is protected from owls and hawks by its resemblance in colour to the dry grasses on the sand-hills.

Ring-doves—A lady will be glad to give a pair of young ring-doves to any one who will give them a comfortable home—not a small cage. Address E. S. N., 4, Eldon Road, Hampstead, N.W.

A Gun instead of a Field-Glass.—Some time since I observed what seemed to me a very singular circumstance in the kestrel hawk (*Falco tinnunculus*). One evening I was passing an old ruined barn with my gun, when from a hole in the cob wall I saw one of these birds fly out. Not being for the moment quite prepared, I fired at long range and missed. Returning to the spot about half an hour afterwards I saw, I believe, the same bird making her exit from the same hole, but in a very peculiar hobbling manner. The bird flew upward, but this time with less success, for I dropped her and picked up a broken egg which she was carrying away in her claws, possibly to some safer retreat.

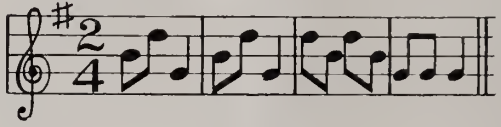
75, *High Street, Barnstaple.* JAS. PARTRIDGE.

Birds and Bicycles.—Are our British birds beginning, like the British public, to appreciate the bicycle? I am inclined to think they are. Certainly one catches many more glimpses of bird life when on the wheel than the uninitiated would expect. It seems as if both birds and wild animals have not the same fear of a cyclist that they have of an ordinary walking human being. The cyclist's approach is practically noiseless, and his image upon their retinæ purely momentary, besides which he never carries a gun nor a catapult, and is unaccompanied by a dog. It is by no means impossible, therefore, that these creatures should associate him with their less dangerous enemies. It is pretty generally accepted that rooks know when a man is carrying a gun, and it seems by no means impossible that birds should associate the peculiar mode of progression of the cyclist with safety. Be this as it may, they let you get much nearer them when you are cycling than when you are walking. The other evening we passed within a yard or so of a pair of partridges, who were squatting on the grass by the roadside, without disturbing them. True, they had the "corner of their eyes" upon us, but they never stirred. Then again, chaffinches when they are feeding on the road fly up and alight on the nearest branch without troubling to go any considerable distance, as they do when one is walking. One is apt, however, to get somewhat different ideas as to the relative frequency of birds in a district, from the saddle of a cycle than one would from walking. For instance, the other evening we had a run of some fifteen miles in haste to avoid a threatened storm, through country lanes with high thorn hedges, interspersed with a fair number of trees and thickets. The evening was chilly, but the nightingales were in full song, and we seemed hardly to have got beyond the range of the song of one before we came into that of another. The natural impression one would arrive at was that the country was full of nightingales; possibly this impression may not be so far wrong, for there seem to be more nightingales this year than there are swallows! But it must be remembered that people do not walk fifteen miles in an evening as a rule, certainly they do not cover the distance

in an hour and a half. The cycle too, is so noiseless, that the bird never hears you, and his song is not interrupted.

King's Lynn. CHARLES B. PLOWRIGHT, M.D.

Is the Blackbird Imitative?—About two years ago, one or two boys in the houses opposite learned to whistle a bugle call like the above, and two other boys picked it up. In any key, in tune, out of tune, that bugle call sounded in our ears till my sister and I were tired enough of it. My sister, being awake lately at about four o'clock in the morning, heard part of a similar sequence of notes whistled by a bird. She could hardly believe her ears. Then we heard the third bar, interspersed with other strains, whistled by a bird in the day-time, when it was not so easy to distinguish the sounds. Before four o'clock on the morning of the 12th (I think), I lay awake and heard the bird as it were practising bits of the bugle call: once I heard the second and third bars together. We never hear the bird whistle the last three notes. To have the bird take up that call, in addition to the boys, was really oppressive!



36, *Quarry Road, Hastings.* S. P. HAWES.

Extermination of Rare Birds.—At a recent meeting of the Teesdale Naturalists' Field Club, a member reported that five or six kingfishers which had for some years frequented the grounds attached to a residence in Darlington had been ruthlessly shot. Strong comments were made about this destruction of a beautiful bird which in many parts of the country is becoming extinct. The majority of your readers will, I am sure, join with the naturalists of Teesdale in deploring the destruction of such rare birds. Appeals to the skin hunters are hopeless. Our country is being rapidly deprived of the noblest of its feathered inhabitants. During the last few years a number of species have become extinct, and other species are fast disappearing. Most of us, unfortunately, have never had the pleasure of seeing many of those birds, and I agree with Hudson as to the cause—the direct action of man, the greedy collector mainly, whose methods are as discreditable as his action is injurious. A remedy for this state of things would, I think, be found in making the Wild Birds Protection Act general in terms. But if all birds cannot be protected, the right principle is to enumerate just those species which are to be outside the pale of protection, not those which are to be within it.

JOSEPH COLLINSON.

Earwig and Worm.—Do earthworms form part of an earwig's diet? On June 4, I noticed a black earwig attacking an earthworm about an inch long, in the moist sandy grit by the roadside at Godstone (Surrey). Their wrestlings were very ludicrous. The earwig would coil round and round the worm, then, retiring a short distance would get under it, apparently to lift it from the ground. Next, the earwig made a small cave in the sand, returned and walked round the worm, as if to judge its size. This it repeated three or four times. Then the struggle recommenced, the worm resisting bravely for some time, but becoming helpless as the grit stuck to its body. The earwig continued to run backwards and forwards, and seemed to use its antennæ as weapons. Gradually the victim was pulled into the hole, only a small portion of its body protruding. A few inches away I saw a part of the mutilated body of another worm.

Clapham Junction. W. JOHNSON.

NEWS FROM THE BRANCHES.

Abinger and Shere.—This branch had a very enjoyable walk on May 14, under the leadership of Professor Boulger, going from Gomshall Station through Abinger Hammer to Abinger Pond, past Crossways Farm—the scene of George Meredith's novel—and over Evershed's Roughs to West Hackhurst, where tea was kindly provided by Miss Forster. After tea Professor Boulger gave an address on "Water-Plants," and alluded to the serious deficit in the funds of the Society. As a result of this appeal a contribution of £1 2s. 6d. has since been received from the children of the Abinger Hammer Band of Mercy.

Bath Branch. Annual Meeting.—The report brought forward at the annual meeting was highly satisfactory, the members now numbering 340, an increase on last year and a good balance in hand. The President, Mr. Skrine, occupied the chair, and there was a large attendance. Five pounds were voted to go to the London branch. The Hon. Secretary finding the work of the branch too much for her single handed, the members elected Mr. M. H. Scott as Joint Secretary, Mrs. Wheatcroft only taking the rambles.

On June 4 another very interesting ramble took place to Midford Castle, at present the residence of the Marchesa St. Agatha Connolly. It is built in the form of an ace of clubs. Report says that it was done so by order of the late Captain Disney Roebuck, who declared if he won a certain game of cards he would build a house resembling the ace of trumps. All the rooms and ornamentations are carried out to correspond. The Selbornians, after traversing the beautiful Midford Woods, proceeded to Avonhill, where they were hospitably entertained by Major and Mrs. Edgell.

We omitted to state in our report of the ramble to Warleigh Woods, that the members were afterwards invited to tea at the Manor by invitation of Lady Mary Skrine, daughter of the President of the branch.

Clapton.—On Saturday, June 11, the members of this Branch had a most enjoyable ramble under the guidance of Mr. W. B. Gerish, from Broxbourne, *viâ* the old Roman Road, to Goose Green, returning by wood and field paths to Hoddesdon, where the party were very kindly entertainted by Mr. and Mrs. Gerish.

Croydon.—The Congress of the South-eastern Union of Scientific Societies held here on June 2, 3, and 4, under the presidency of Professor Boulger, was very successful. The Selborne Society was represented by Mr. E. A. Martin, F.G.S., but no topic of distinctively Selbornian interest arose.

SELBORNE SOCIETY NOTICES.

Donations.—The Council acknowledges with many thanks the following donations to the funds of the Society:—Abinger Hammer Band of Mercy, £1 2s. 6d.; Bath Branch (additional), £5; Northern Heights Branch, £2 6s.

Field Club Saturday Rambles:—

July 2.—Uxbridge to Denham by the river Colne and Canal. Meet at Uxbridge Station on arrival of 3.35 train; Paddington, 2.50; Willesden, 2.40 (change at Southall); Ealing, 3.6. Guide, Mr. H. Ravenshaw.

July 9.—Visit Hayes and Keston Commons. Take Return ticket to Hayes. Cannon Street 2.23, London Bridge (S.E.R.) 2.24, Elmers End 2.57, where change for Hayes. Croydon contingent take train from Addiscombe Road, 2.32 to Elmers, where change. Thornton Heath contingent meet the conductors, Messrs. Parnell and Martin, at Norwood Junction (Booking Office) at 2.10, to walk to Elmers End. Return from Hayes at 8.23. Cyclists from Croydon go by the Upper Addiscombe Road and Wickham Road, through West Wickham to Hayes Common.

July 16.—Meet at Pinner Station (L. & N.W.R.) 3.30; trains leave Broad Street 2.47; Willesden Junction 3.9; Ealing (G.W.R.) 2.48. Tea at Eastcote Post Office. Guide, Rev. H. E. U. Bull, M.A.

Council and Committee Meetings:—

The next meetings of the Council will be held on July 5 and August 2 at 5.30; of the Magazine and Leaflet Committee on July 19 and August 16 at 5.30.

ANSWERS TO CORRESPONDENTS.

C. J. R.—Your plant is *Buddleia globosa.*

F. E. Martin.—Thank you for your suggestive letter. You are almost certainly right in attributing the fugitive character of some flower colours to their being in solution, and the permanence of many yellow colours, when dried, to their association with chromoplastids; but we hope to return to the subject.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S. As he will be out of town during August, they should, from July 25 to August 31, be sent to "care of MESSRS. JOHN BALE, SONS & DANIELSSON, Great Titchfield Street, W." Letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W.

PETITION promoted by the Barmouth Branch of the Selborne Society. Members are invited to sign and obtain signatures; and to send this form to Miss BLANCHE ATKINSON, Tyn-y-ffynon, Barmouth, N. Wales,—by the 31st August.

To the Light Railway Commissioners,—

In the matter of the Portmadoc, Beddgelert and Rhydden Light Railway Scheme of 1898. The Humble Petition of the undersigned, sheweth:

That the proposed Light Railway will enter the Pass of Aberglaslyn at a point distant about 15 chains from the Bridge of Aberglaslyn, and near the bed of the River Glaslyn; that thence being continued in the Pass by cuttings and embankments for some 33 chains along the eastern or left bank of the river, it crosses the river by a bridge of two spans, each 30 feet long and 10 feet high; that afterwards it crosses the main road at a short distance from such bridge.

That your Memorialists consider that the works above referred to, will irretrievably injure the natural beauty of the celebrated Pass of Aberglaslyn; that the requirements of the District do not justify such injury, and that the best interests of the public will not be served thereby.

That your Petitioners may be heard by their Counsel and Witnesses in opposition to the Scheme.

And your Petitioners will ever pray.

Signed:

Nature Notes:
The Selborne Society's Magazine.

No. 104. AUGUST, 1898. Vol. IX.

SELBORNIANA.

National Trust for Places of Historic Interest or Natural Beauty.—A well-attended annual meeting of the members of this Trust was held at Grosvenor House on July 20, under the presidency of the Duke of Westminster. A most satisfactory Report was presented, from which it appeared that during the year the Trust has acquired the Joiners' Hall, Salisbury, and Toy's Hill, Kent. Reference was also made to the desirability of securing Tintern Abbey, which is about to be sold. Interesting speeches were made by the Chairman, Canon Rawnsley, Sir Wilfrid Lawson, Sir John Hibbert, Dr. Longstaff, Lord Crewe, the Bishop of Bristol, Mr. Waterhouse, R.A., and Sir Robert Hunter.

Golder's Hill.—This beautiful addition to Hampstead Heath is now virtually secured. The thirty-six acres are surrounded by a belt of fine elms, and include a fine modern house, beautiful lawn, gardens, pretty piece of water, and some well-timbered meadows, skirting the West Heath from the hamlet of North End down to below the bottom of the valley in which is the Leg-of-mutton Pond. The house and lawn command a lovely view towards Harrow. The Committee of the Hampstead Heath Extension Scheme, under the chairmanship of Sir Henry Harben, offered a guarantee of £35,000, but the bidding at the sale going beyond that sum, Mr. Barratt, with great public spirit, secured the property at his own risk for rather more than £38,000. To meet this sum, nearly £14,000 has been raised from individual donors, the Hampstead Vestry have voted £10,000, and the London County Council, £12,000. Contributions are also expected from the Vestries of St. Pancras and Marylebone, so that Londoners may be congratulated on the acquisition of this most valuable addition to their most popular "lung." The

Committee gave a garden party on the estate on July 21, which was attended by five or six thousand people. We hope to be able to give one or more views of the grounds in our next number.

Churchyard-Bottom Wood, Highgate, was formally opened by the Duchess of Albany on July 23, its name being altered to Queen's Wood.

A Law for the Protection of Birds.—A Bill for the Protection of Birds was passed on March 24, by the Senate of the United States, introduced into the House of Representatives on March 25, and referred to the Committee on Agriculture. It is entitled "An Act for the Protection of Song Birds," and its provisions are as follows:—

"Section 1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the importation into the United States of birds, feathers, or parts of birds for ornamental purposes be, and the same is hereby, prohibited: *Provided however*, That nothing herein contained shall be construed as prohibiting the importation of birds for museums, zoölogical gardens, or scientific collections, or the importation of living birds or of feathers taken from living birds, without injury to the bird. The Secretary of the Treasury is hereby authorised to make regulations for carrying into effect the provisions of this section.

"Section 2. That the transportation of birds, feathers, or parts of birds, to be used or sold, from any State or Territory of the United States to or through any other State or Territory of the United States, is hereby prohibited. Whoever shall violate the provisions of this section shall, upon conviction in the district where the offence shall have been committed, be punished for each such offence by a fine of fifty dollars.

"Section 3. That the sale, keeping, or offering for sale, within any Territory of the United States, or within the District of Columbia, of birds, feathers, or parts of birds, for ornamental purposes, except such as are excepted in the first section of this Act, be, and the same is hereby, prohibited. Whoever shall violate the provisions of this section shall, upon conviction, be punished for each such offence by a fine of fifty dollars."

We heartily approve of this proposed legislation, but we value it much more because of its educative influence than because of its probable effect as a prohibitive and restrictive measure. We have hoped that the women of our country might be moved by compassion to abstain from the use of ornaments, every one of which costs the life of some innocent and beautiful creature of God. In common with all humane people we have protested against the selfish vanity of women in wearing such certificates of heartlessness. We have appealed to women of fashion to use the power which they possess—and it is a power

greater than that of law—to bring this inhumanity to an instant stop. Every appeal has thus far been in vain. Birds continue to be slaughtered, not by hundreds, nor by thousands, but by millions upon millions, for the gratification of a senseless fad. Whole species of the most beautiful denizens of field and forest, woodland and shore, have been almost or quite exterminated. Song birds have been driven further and further from the dwellings of men; our country is stripped of one of its least costly and most charming delights; and all for what? For the gratification of a silly vanity, of which women ought to be ashamed. It is in vain that economists and men of science have protested in the name of utility, in vain that the pulpit and press protest against it in the name of humanity; and we fear that legislation will have little more effect. So far as it may avail, in however slight a degree, in diminishing the nefarious business of bird destruction, we shall be thankful for this legislation; yet we confess that we have read this bill with a feeling of sincere humiliation, because it seems to us to be a just indictment of the women of America on a charge of wilful, wanton, reckless inhumanity. The worst of it is that the indictment is just. The women of America * who have made it possible by making such legislation necessary, ought to be ashamed of themselves. —*From Our Animal Friends.*

AUGUST.†

AUGUST days, and August weather;
Rain, and wind, and sun together;
Budding willows, flow'rs unfolding;
Bleating, new-born lambs beholding
Meadows green; birds singing—hearken
Trilling, warbling, till skies darken;
Ploughs at work, and here men sowing
Fields for ruddy autumn's mowing.

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* Those of England have an equal cause for shame.—ED. *N.N.*

† It is startling at first to read of August as a spring month; but these lines are from "Poems, by a New Zealander" (Kegan Paul).

LETTERS FROM SOUTH AFRICA.—I.

THE pleasure NATURE NOTES gives me is responsible for this and following letters from a part of the world where the naturalist's harvest is plenteous, but observers very few, and while expressing the hope that your readers will be interested, I could wish they were not so far off, since there is no encouragement even to dream of a Field Club or a Selbornian Society here.

From my seat on the "stoep" (Afrikanderism for path immediately round house) under the verandah, I gaze upon a part of the tepid Indian Ocean, about three-fourths of the distance from the Cape to Natal; and, early though it be, the Mozambique hot current some miles out has begun its curious mirage effects. I can see the surf beat upon long miles of yellow sand, and follow to the horizon on both sides the prominent bush-clad ridge running closely parallel with the shore. Behind is a fresh, luxuriant-looking country of undulating grassy downs, freely dotted with thickets and scattered mimosa, the "kloofs" (vales) between being more or less densely wooded. As the sea is approached the land more noticeably becomes blocked out into somewhat geometrical relief by the many streams and tidal rivers that near their mouths form deep, beautiful "creeks," where much dark-green impenetrable bush is lodged and mirrored in the passing waters, along with the recurring grey "krantzes" (precipitous rock) into which the steep sides break, while over all is a sky not so unfailing in its unclouded blue as we would like.

Soon after breakfast my Kaffir boy "Sixpence," gets the order to saddle-up the pony, and as the sun is rapidly warming to that sub-tropical race over which he becomes so heated, I set out hoping to see, at all events, the reeds shaken by a cooling breeze.

Passing along a glade where clumps of the wonderfully specialised *Strelitzia Regina* alternated with beds of a large white and yellow *Iris*, and the edge of the bush was here and there festooned by the bright scarlet *Tecoma*, I came upon an artisan seeking fresh captives for his aviary; but instead of the ethics of the proceeding I discussed with him his *modus operandi* and the habits of the birds he specially sought. In his trap-cages were two species of waxbill (*Estrelda*) which he called wrens, each not more than four inches long,—one with head and nape ashy, back greenish, wings rufous, rump red, tail black, throat likewise, underparts from white to yellowish, and, as if these markings do not afford variety enough, the upper mandible black while the lower is scarlet. The other, known as the Ruddy Waxbill, is dark olive brown above, vinaceous beneath, as are the cheeks and rump, vent and tail black, while sides of breast are curiously speckled with tiny yellow dots. It will thus

be recognised that these birds are wee beauties. Though they have no song to give, their plumage, and pert sociable ways, together with the fact that they are seed-eaters and do not readily languish in confinement, have led to their being considered, as is all the genus in South Africa, fitting subjects for the aviarists' aggressive care.

We have no heather here to set in lurid blaze on autumn nights; but to provide stock with a sweet bite during winter our farmers burn off large patches of the veld (uncultivated ground everywhere in South Africa is called "veld"), and drawing near to one of these fires not long started, I was interested to observe a host of swallows and swifts busily hawking leewards, often in the densest of the smoke close up to the flames, after the flies which the fierce heat compelled to take wing. We by no means despise smoked fish, and I trusted these particularly industrious birds equally relished that meal.

Rising from a headland overlooking one of our tidal rivers called Nahoon, where there are a few stretches of the damp, low-lying ground they are said to prefer, were seen a couple of Pallid Harriers (*Circus macrurus*), whose general colour is from ashen to bluish grey. These have a perfect flight, being equally clever at hovering, arching hither and thither, skimming along just shaving the ground, or beating across the sky in swift measured progression, their big sickle-like wings and long broad tails being well fashioned for such varied work. A glimpse was also caught of our little sparrow-hawk (*Accipiter minullus*), which is not often seen, as it keeps close to the bush, and being rather dark coloured one does not usually detect it perching.

Only a few species of Woodpecker appear in this locality and these but sparsely, probably because our "bush" is bush and not forest; their first cousins, the Barbets, being, however, more in evidence. The *Campethera notata* which I saw with a swinging sort of flight cross the river, is perhaps oftenest observed, and is a pretty bird in its way—brownish green above, much barred and spotted with pale yellow, occipital crest scarlet, which colour spreads over the cheeks and tips the head feathers, under surface yellowish, with numerous dark spots from round to triangular in shape, the tail being a warm brown with golden bars and tips "worn down to the bone" in true picinian style. The total length of this species is 8½ inches.

We are the happy possessors (or at any rate, would so consider ourselves, did more than 5 per cent. of us know one bird from another) of an Oriole, which either never adopted or long ago resigned the "harbinger" *rôle*. It is fairly numerous here all the year round, and kloofs, where real trees (required for nesting) and a stream exist, are often much enlivened by the liquid piping of this lovely bird, whose coal-black head alone distinguishes it from the Golden Oriole you English folks who are not Selbornians, give such *warm* reception to. I notice when the breeding season is past its rich golden yellow is toned

down to light canary, and the black wing-coverts lose distinctness.

A few most interesting members of the titmouse family abide here: the one seen on this occasion (*Parus niger*) is widely spread, and hereabouts almost always met with in pairs, hurriedly passing from bush to bush, into the hearts of which they promptly dive, expressing themselves with angry chatter when apprehending observation. Getting unnoticed upon an overhanging bank, I was enabled to closely watch a pair of the species named, and noted that while the deep black plumage of the male is relieved by a white shoulder patch and white edgings to quills and tips of tail feathers, his companion—either the female or a full grown youngster—did not show these markings, but had instead a faint rufous rump. Their calls were identical, and saxicolean affinities were exhibited in frequent jerky erections of tail and flicking of wings.

Arriving at a big krantz surmounted by a strip of bush, things were made lively by the appearance in the latter of a family of Black-faced Vervets, the youth of which were apparently being taught their manners, the chasing and screaming going on being suggestive of a back-slum scene. It was amusing to see the haste with which they sought cover when aware of my presence: very likely they did not go far, as I have noticed before how effectively they hide by simply placing themselves against the grey trunks of trees or in crevices of grey rocks—this colour harmonising completely with their own fur. To a farmer, soon afterwards met, I spoke of these monkeys, and he remarked they were becoming too numerous, instancing a recent occasion where, while waiting in the bush for a chance shot at a buck, a large troop of them swung across his path, and when thirty-four had been counted he could not resist the temptation to fire, which caused half as many more coming on to drop to the ground and scamper past him.

When I encountered this farmer he was on his way to place among such swarms as were infesting his "lands" a few locusts, to which had been artificially imparted a certain fungoid disease. Inoculation is the present panacea for some of the numerous ills our farmers have to contend with; and the value of the same was conspicuously demonstrated last year when rinderpest entered the Colony and threatened to make a clean sweep of the cattle, had not the brilliant Dr. Koch arrived and on the spot discovered a means of greatly checking the plague through inoculation. Now it seems the migatory locust, guilty of vast havoc ever since 1893, is to be fought by a somewhat similar method, in which it is very much to be hoped science will prevail.

There is no time of the year on this part of the coast when a botanist cannot find plenty of field work, and though for a month or two after midsummer the veld has least to offer him the flowering shrubs come again to the front. I was not par-

ticularly seeking plants during this ride and so merely noticed that *Watsonia*, *Gladiolus*, *Lobelia*, various *Senecios*, and a strongly scented *Habenaria*, were plentiful among the grass; but there were two very interesting parasitical forms found in the bush which merit the account of them to be given in my second letter.

East London, Cape Colony. VELDMAN.
February, 1898.

IN FAR ARGYLL.

THE old-fashioned house, rooted in short sea turf, stands at the open mouth of the glen, severe and bare in its absence of shrubs. Like the horns of a crescent, on either side of the small bay, spurs of the lower hills slide into the sea. They are clothed with wind-blown woods of birch, alder, and hazel. Higher up pine, larch, and hardwood flourish. In front the ocean breaks on sand, gravel, and rocks, whose brown weeds spread and play in the clean tides. Sometimes the bay is whitened with crested rollers, and sometimes in the sunshine light land breezes shiver in silver along the blue. Always there is constant motion, the perpetual charm of water views. The switch-back road behind crawls along the coast with innumerable undulations, like a brown caterpillar in motion. The steamers pass in front, splashing mimic tidal waves on the coast, and evening brings out the fleet of brown-sailed herring-boats.

Close to the modern house, salted by the spray of many a gale, stands the grey old Castle. A little burn, sucking its life from the mosses and moors, passes beneath, shallow and shingly, its ripple hushed or clearer according to the tides. Hedges of Veronica, Fuchsia, Cotoneaster, and Escallonia edge the avenue and bowling-green. The old place, recently restored both in and out, may stand as it has stood for many another century. There are scarcely crevices for the hardy sea-spleenwort and pendent toadflax. No seedling elder or ash, or sycamore or rowan has yet sent down disintegrating roots irreverent of antiquity. Long ago from these towers the frightened villagers may have watched Captain Kidd's ill-omened vessels, "built in the eclipse and rigged with curses dark." Certainly at one time he was about this coast. It was here in the good old days that the Lady Macdonald, abducted and held a prisoner, saw the body of her husband carried out, and leapt from the crenellated battlements and died. Not far away crumble the last remains of the Monastery, where rest the Macdonalds, Gregorys, and Somerlids, the priests and warriors of the past—"the knights are dust, their swords are rust, their souls are with the saints, we trust."

On the roads and avenues, dappled with light and shade, the

rosy village children, with unmissed flowers in their hands, bob their sudden curtsies or nod their rustic bows. On Sundays the auld Laird hears the best little scholars say their hymns and psalms, well pleased indeed to be dismissed from him with a brief word of commendation. Here in the fields and woods about this old-world spot, spring—nearly of age, but not quite summer yet—is almost at its height. The gorse is a glow of gold perfumed, the wood-hyacinths seas of deep blue and starred here and there with primroses: neither are these latter yet over. In the hedge banks the red campion, wild vetch, wild carrot, germander speedwell, water-avens, blue bugloss, crowfoot and wild strawberry, peep or brag in the long grasses, cocksfoot rye and anthered sweet vernal and timothy. On the close roadside turf of the moors, blossom lousewort, loosestrife, yellow Potentilla, and milkwort blue and white and pink. In the damp the violet-headed butterwort springs from its star of flat leaves, and the orchids, purple and white, are rearing their showy spikes. There are sea pinks on the spray-splashed lichened rocks, and sea campion and silver-weed in the loose white sands.

On the moors the grey hen's brood is running, the parents betraying their whereabouts in their very anxiety to mislead. The curlew's haunting cry and the plover's peevish complaint enliven the moors. In the lower pastures the crouching corncrake runs like a rat in the gleaming ryegrass. The noisy, brilliant-plumaged oyster-catcher, sentinel later to the ducks in the shooting season, the gorgeous sheldrake, many mallards who fly seaward when disturbed and whose mates build in the brown bog-myrtle thickets, sandpipers, and an occasional cormorant, haunt the coast. Regularly at meal times the gulls in their pure greys assemble about the house—these and the chattering jackdaws, starlings, thrushes and blackbirds are nearly all day running, hopping and feeding about the short sea turf. Out at sea the splendid solan goose, in great sweeps or flapping heavily, hunts the long sea pastures: the black and white of their wings shows plain at a great distance, and when they drop like plummets into the sea the foam splashes up white. In the tall larches near at hand the herons are very quiet now: only their young clamour and hiss in the huge untidy nests. Among the smaller, less common birds I noticed whitethroats, redpoles, willow warblers, black-headed buntings and yellow wagtails. Unnibbled and untrod the tall wood grasses are shooting up: the tender green of the fresh pine and spruce, the oak, blossom-coloured in its early reds and yellows, the tardy ash, the green of larch and birch and sycamore, tell of the coming summer. All day the ferns uncurl their circinate fronds. Full spring has come again—not far different from last year indeed, or much unlike the seasons to come, yet full of promised good and with pleasant reminiscences of the past. Maybe it is because we have seen all these things before that it delights us to see them again. Perhaps, as children love to hear the old

story repeated word for word, so we, children of a larger growth, rejoice in the rejuvenescence of a world we have known before.

H. Guthrie-Smith.

SOME NOTABLE TREES AND SHRUBS.

THERE are many trees and shrubs cultivated in our land which, though not indigenous, are well worthy of our notice. They come from many and various countries, are grown mainly for their beauty, and live, though often with some difficulty, through the most trying winters that we have to pass through.

Sometimes they bear their place of origin in the names by which they are designated. Such are the Cedars of Lebanon, which adorn many a fine park and, by their presence, serve to show the vanished site of many a famous house which might otherwise never have been detected or even thought of. The grounds of Chiswick House, which is, we regret to learn, soon to be laid out as a building estate, possesses some of the most gigantic cedar trees in England. As this house was a Palladian villa built by the famous Earl of Burlington, and as in one of the rooms died George Canning, and in another Charles James Fox, it is sad to learn that this is to get into the hands of the house-builder. But such is the fate of all the famous London houses, and the time of Chiswick House has at last come. The Cedar of Lebanon is endowed with a beauty and magnificence of form which always commands respect, being one of the finest of our cone-bearing trees. It was introduced rather more than two hundred years ago. Its short-stalked female flowers when they have been fructified by the pollen from the stamens, develop into erect, large, ovate, and solitary cones that when full-grown are almost as hard as a bale of wood, and composed of scales pressed close together.

Often, too, we find a tree whose popular name may prompt us to look up its history. Such is that usually known as the Acacia, which took its name from a mistaken belief that it was of the same species as the Egyptian Acacia, or Locust-tree, which it much resembles in the leaf. But, though it has been among us for nearly two hundred and fifty years, it comes from quite another source. It is said to have been introduced from North America in 1601, by Jean Robin, a French botanist, from whom it takes the name of *Robinia Pseudacacia*, or False Acacia. It was one of the first trees that we received from America, and it has been more extensively propagated than any other, both in France and England. In both countries it has been alternately extravagantly extolled and extravagantly neglected, and though the

beauty of its foliage and flowers have been enthusiastically praised, it cannot be at all considered as worth planting with a view to profit. An extraordinary sensation was excited in Britain respecting this tree by Cobbett in 1823, he being then of opinion that nothing in the timber-way could be so great a benefit to this country as the general cultivation of this tree. He, accordingly, lauded it as far superior to the oak; started business as a nurseryman, and supplied the tree as a new one, which, though introduced long before, had been forgotten in England. It was then, no doubt, that Robinias were planted in the gardens along the river-side at Richmond, where they still exist, and produce their flowers in abundance. Its singularly light and graceful foliage has a very charming appearance. Seven pairs of pretty little ovate leaflets run pinnately along the axis of the leaf and are terminated by a single leaflet, all of a bright golden green. The flowers are white, and of charming fragrance, they do not appear till the end of May, and are then borne upon the twigs in pendulous racemes, much as are those of the laburnum.

From Japan come many of our choicest flowers, and therefrom, too, come some of the trees that we have to refer to, such as that called in Japan the Gingko, which is a large conical deciduous tree, and was introduced into this country in or about 1754. It is a unisexual plant, and bears the staminate and pistillate flowers on distinct plants. With us it often, though improperly, bears the name of Salisburia, which it took in honour of R. A. Salisbury, a distinguished botanist. Sir M. E. Grant Duff, in his very interesting "Notes from a Diary" (vol. ii., p. 51) calls it "the *Jingo*-tree of the Chinese," and adds that the name led to many jokes at the period (1878). The only known species is called *S. adiantifolia*, or maiden-hair tree, since it bears leaves like those of the maiden-hair fern (*Adiantum*), that turn yellowish-green when they fall off. The correct botanical name of this tree is *Ginkgo biloba*. The male catkins which appear with the leaves in May, on old spurs, are sessile and yellowish in colour; and are the only ones, it is believed, as yet produced in England. In this characteristic it somewhat resembles the Japanese shrub *Aucuba japonica*, which also bears the staminate and pistillate flowers on different plants. For some time, only the female plant of this species had been introduced into British gardens, though at last the male plant having been introduced also, the beautiful red berries are freely produced and much appreciated. Possibly, by and by, the female flower of the maiden-hair tree may be produced in England, as it has been in the south of France, where the seed has been ripened, and young plants have been raised from it. The seed resembles an ovate drupe, an inch in diameter, and it contains a kernel of a woody tissue, that breaks easily. The coat of the seed becomes fleshy and oily, exhaling when ripe a strong smell of rancid butter; but the kernel tastes like a filbert and is served at banquets in Japan as a digestive. Though we can hardly

expect the seed to ripen in this country, we should like to see the female flower here.

Other trees that deserve notice are those fruit trees that are cultivated only for the beauty of their flowers. Such is that cherry tree which, owing to the fondness of birds for its fruit, is known as the bird-cherry, *Prunus Padus*. It is a really beautiful tree that grows to the height of 40 feet, and bears abundantly pure white flowers, on long racemes, with five petals each. The cherries are black, bitter and small. It is admirably suited for ornamental purposes, as its bright green summer foliage is followed by autumnal beauty of red and yellow tints that contrast with the sheen of its ebon fruit.

Perhaps the most beautiful species of Bird-cherry trees that is grown in England is *Prunus Mahaleb*, the Perfumed Cherry tree, which is a handsome small tree with white bark, numerous branches, and wood, leaves, fruit, and flowers, alike powerfully scented, the flowers so much so as to be hardly endurable in a room. Wherever it grows it diffuses a most grateful fragrance all around, which may be well enjoyed at the top of Nightingale Lane, Richmond, where a fine Mahaleb cherry grows, and every spring sheds perfume on all sides. Its smell is said to be less powerful, but more agreeable, when it is dry than when the sap is in it.

Sometimes a tree comes into notice in a strange way. This is the case with the Virginian Date Plum (*Diospyros virginiana*), which, though it was introduced into this country in 1629, and has grown to the height of 30 feet near London, attained celebrity through its fruit, the *Persimmon*, being the name given to a famous racehorse which won the Derby for the Prince of Wales; and then everybody was wanting to know what the *Persimon*, as it is usually called, was. Its pale yellow flowers appear in July, and the yellow fruit is ripe when the tree drops its leaves in November. The tree grows much taller in the United States, from which country it was introduced.

We might go on to mention the Chili pine, *Araucaria imbricata*, a well-known prickly tree, often called, as it may well be, the monkey puzzler, which took its botanical name from the people (Araucanos) in whose country it grows in Chili; the *Eucalyptus*, one or two species of which have been introduced from Australia, and the *Sequoias*, gigantic pines which were introduced from California, and one of which is often called the *Wellingtonia*, much to the disgust of the Americans, it having been previously named after a remarkable Indian chief. Sir M. E. Grant Duff says that these pines are all very ugly, which we can hardly believe. But though the Sequoia has taken its place in our grounds, and grows well; the Eucalypti which attain an even mightier size in Australia, have never yet withstood our worst winters, so that they cannot be ranked amongst our timber trees.

But, surely, here in England we should be proudest of our indigenous tree, the oak, of which it may be well said that :—

"The Oak, when living, the monarch of the wood,
The English Oak, when dead, commands the flood.
The monarch oak, the patriarch of trees,
Shoots rising up, and spreads by slow degrees;
Three centuries he grows, and then he stays
Supreme in state; and in three more decays."

The oak is pre-eminent for the noble qualities of strength and endurance, and its history is closely interwoven with the record of our national life, and takes us back to the early times when our island was covered by almost unbroken woods, which could not but influence much of its history. It is not well known that there are two kinds of indigenous oaks, called sometimes the wavy-leaved oak and the flat-leaved oak, the *Quercus pedunculata* and the *Quercus sessiliflora*, which are clearly distinguishable, though it is not easy to say which is the better of the two. The first takes its name from the fact that its fruit, the acorn, is borne upon a slender peduncle or stalk, which is often several inches long; the fruit of the second is what is termed sessile, from the Latin word *sessilis* "sitting," because it sits upon its support without any intermediate stalk. The leaves of the wavy-leaved oak are stemless; but those of the flat-leaved oak are borne on stems, which are often of good length.

The word *Quercus* is said to be of Celtic origin, and means a fine tree; and the word *oak* comes from the early English *ac*, from which, also, we take the name of the fruit, the *acorn*, and from which, too, we derive the name of many places, such as Acton, which means Oaktown. The word *Robur*, sometimes applied to oaks in general, is a Latin word which denotes strength, and the ancient Greeks, with whom the oak was a prominent forest tree, called it "*drys*," whence comes the name of the *Dryads*, or nymphs of the wood, and possibly that of the *Druids*, though that may better be derived from the Celtic word *derw*, which means the oak, and is applied to the priests of Ancient Britain, and, after them, to many an old fort or earth-work, to which it is often misapplied by those who will not seek for better derivations.

We should also mention *Quercus Ilex*, the evergreen oak, which, from a naturalisation of many hundreds of years, has almost a right to claim a place among our woodland trees. This is probably the oak referred to in the Bible. It is not by any means so noble a tree as our oak; and though it bears acorns, the fruit takes two years to perfect, and bears bitter and sweet fruit, sometimes on the same tree. The leaves have a sort of resemblance to those of the holly, hence the tree is often called the Holly or Holm Oak.

Rookwood, Bournemouth. W. J. C. Miller.

LIZARDS AND SNAKES IN TASMANIA.

WE are rich in lizards here; they abound everywhere, sunning themselves on the tree-trunks, crawling over the stumps, running about the garden and occasionally investigating domestic affairs in the house. They are mostly quick, lively little fellows with brown skins diversified with black, and eyes as bright as diamonds.

Then there are the "blood-suckers," ashy-grey lizards with irregular black markings upon the back, and covered with spiny projections; most people are rather afraid of them, and they do look very ferocious when annoyed, for they open their mouths with a gape like a crocodile, as if it would give them great pleasure to swallow us whole.

The "death-adder" is another lizard that grows to a good size, and is very prettily marked; they are much dreaded in the bush for their supposed poisonous properties, and the most dreadful tales are told of their envenomed attacks. Probably the idea has arisen through the snake-like appearance of these saurians as they glide through the herbage, their bodies being very long and slender, and the legs comparatively short.

The largest of all our lizards, however, is the "blue-tongued," a stout, formidable-looking fellow, clad in a yellow and black suit of plate-armour, and much given to lying about the bush roads and tracks asleep in the sun when one can often step over him, even on horseback, without disturbing his slumbers. This heaviness of disposition has earned for our stolid friend another name—the "sleeping-lizard"—while from his fondness for taking up residence in the holes of dry stumps, he is also known as the "stump-lizard." Finally, his nickname among the bush-folk is "goanner," a corruption evidently of "iguana," to which family, however, he bears no resemblance, being a non-climber and of a thick, stout build.

Now this "blue-tongued lizard," the *Tiliqua nigrolutea* of naturalists, deserves good treatment at the hands of the bush-man on account of one very interesting peculiarity which it manifests in common with the lord of creation—namely, its great antipathy to snakes. In Tasmania, it takes the place of that noted cobra-destroyer, the Indian mongoose, and ill-adapted as it would at first appear to encounter such foes, yet it generally comes off the victor. We spoke just now of the heavy, stolid disposition of our black-and-yellow knight, but let a nice medium-sized snake heave into sight, and all is changed. The sleepiness disappears as if by magic, and every nerve seems on the alert, every sinew toughened to meet the enemy. This latter has evidently "no stomach for the fight" and would "straight depart," but his assailant bars the way, and forces an encounter. Then quick as lightning the snake makes a dart, but our friend dodges with practised skill and "gets in" a bite

himself. So they go on, darting and dodging and savagely snapping at each other, the snake getting the worst of it all the time, and soon exhibiting the most unmistakeable signs of being played out. Now is the "goanner's" opportunity; with a quick dexterous turn he twists the snake over, and gives him a *coup-de-grace* "under the chin." Then comes the reward of valour; taking the head between his strong jaws, our blue-tongued hero begins with much relish to munch his fallen foe, and sticking to him with the same persistency as during the fight, soon disposes of his whole scaly length, and having thus "accounted for" another child of the Evil One, the victor retires to the shelter of a hollow log to sleep off the repast.

H. Stuart Dove, F.Z.S.

Table Cape, Tasmania.

A WORD FOR THE OWL.

OWLS' feathers have lately been very prevalent in hat trimmings, and attempts have been made to justify the use of such feathers on the ground that "the owl" is a thief and that he does great harm to pigeons, poultry and small birds. The following statistics have been prepared to exonerate owls in general from the charges brought against them and to enlist in their defence the sympathy of all lovers of interesting, harmless and helpful wild life. The facts are taken from the statistics published by the United States government in Dr. Fisher's "Hawks and Owls of the United States," Bulletin No. 3 of the Department of Agriculture, Division of ornithology and mammalogy.

There are five species of owls which may be termed common in the eastern United States; of these the screech owl is by far the commonest and probably outnumbers all the other species together. This owl has the following record: Out of 255 stomachs examined, none contained pigeons or poultry, 16 per cent. contained the remains of birds, and 80 per cent. those of mice, insects and English sparrows.

The figures for four of the common species—the screech owl, the barred owl, the long and short-eared owls—are as follows: Of 572 stomachs examined, 1 1-5 per cent. contained poultry or game birds, 9 per cent. small wild birds, 52 per cent. mice, and 26 per cent. insects. The great horned owl, it is true, has a bad record, for of 127 stomachs examined, 25 per cent. contained the remains of poultry or game, and only about 23 per cent. those of mice or insects. This owl, however, is becoming one of the rarer species, and it is unfair, to say the least, to condemn the whole family on account of one black sheep.

Dr. Fisher goes farther and points out the grave injury which

would inevitably result to the farmer and to the gardener if owls were persecuted. The figures given above do not, of course, give the exact proportion of good which owls do; some individuals had nothing in their stomachs, some had other mammals or spiders; but it is certainly safe to befriend in every possible way the four species whose bill of fare is so constituted that four out of every five individuals dine on mice or insects.—*Massachusetts Audubon Society for the Protection of Birds.*

REVIEWS AND EXCHANGES.

Types of Scenery and their Influence on Literature. By Sir Archibald Geikie, D.C.L., F.R.S. The Romanes Lecture, 1898. Macmillan & Co. 2s.

Few, if any, of our living men of science have a literary gift equal to that of Sir Archibald Geikie, so that it was a happy choice which selected him to deliver the Romanes Lecture; whilst at the same time he could hardly have chosen a more suitable subject for an address to so exclusively literary a university as that of Oxford than the influence of scenery upon literature. In his masterly treatment of this theme, so interesting to Selbornians, he describes three leading types of British scenery, lowlands, uplands, and highlands, taking Cowper, Thomson and Burns as the chief exponents of the first, Scott of the second, and Macpherson's "Ossian" and Wordsworth of the third. The following is his summary from this standpoint of our earlier poets:—

"The simple, child-like delight in Nature, so characteristic of Chaucer, and the influence of cultivated scenery, so conspicuous in him, are readily traceable among his successors. Shakespeare throughout his plays presents us with not a few reminiscences of his youth among the Warwickshire woodlands. In Milton we see how the placid, rural quiet of the Colne valley inspired the two finest lyrics in the English tongue. For a century after Milton's time poetry in this country ceased to have any living hold on outer nature, but became, with each generation, more polished and artificial. When at last a reaction set in, the impulse that led to the most momentous revolution that has marked the history of English poetry came in large measure from the writings of three poets, each of whom drew his inspiration from lowland scenery."

Sir Archibald next discusses the influence of the scenery of the Ouse valley upon Cowper, and then—what is of special interest to us from Mr. Lionel Johnson's article in our volume for 1892—the source of the inspiration of Thomson.

"Thomson," he says, "came to London in 1725, when he was 25 years of age, and the following year he published his 'Winter.' The poem, though written at Barnet, took its inspiration from the Border. . . . It is interesting to note that even after he had been five years in the south of England, and must have seen in that time much variety of weather and many different watercourses, it is still from the north that he draws his sketches. When, for instance, he tells how in autumn—

"Red from the hills, innumerable streams
Tumultuous roar,

the colour of his torrents betrays their Scottish origin. He was thinking of the spates in his native streams which sweep across tracts of Old Red Sandstone, and come down almost brick-red in hue. There are no red rocks, and therefore no red brooks in Middlesex and the surrounding districts."

Space does not allow us to quote further; but the author goes on to show that in "The Castle of Indolence" the influence of England gained entire sway. Equally interesting is the tracing of the increasing appreciation of the wilder aspects of nature from the publication of Macpherson's poems (1760) inspired by the highlands of Western Argyllshire, to the works of Rousseau, and Scott's "Lady of the Lake" (1810). The whole lecture is, in fact, most suggestive.

Insects: Foes and Friends. By W. Egmont Kirby, M.D., with preface by W. F. Kirby, F.L.S., F.E.S. Partridge & Co. 1s. 6d.

This handy little book of less than 150 small pages, but with thirty-two excellent coloured plates, describes about eighty insects, and figures nearly seventy of them. The book itself is translated from the German, and the names on its title-page are a sufficient guarantee of the care with which it has been adapted for English use. Eighty species form, of course, a very limited selection from the 12,000 British, or 300,000 known species of insects; but the examples chosen include representatives of the seven principal orders, so that the book will form an admirable introduction to the study in our rural schools. The following passage from Mr. W. F. Kirby's preface will, we think, be of interest to all English students of Nature:—

"Sometimes an insect which is very destructive in one country may become extremely rare or extinct in another, without any apparent reason, as in the case of the Black-veined White Butterfly and the Gipsy Moth, which are very destructive on the continent, but are almost extinct in England. . . . The amount of mischief caused to farmers and gardeners in Britain, however, is much less than that to which they are exposed in many parts of the Continents of Europe and North America. Our damp, unsettled climate is peculiarly unfavourable to insect life, and our insular position also accounts for our insect fauna being much poorer in species, as well as less numerous in individuals, than the neighbouring parts of Europe. Many species of insects, too, are much reduced in numbers by the operation of the Wild Birds' Protection Act, for most of the birds which fall under its operation are more or less exclusively insect-eaters, and I think it probable that the disappearance of the Black-veined White Butterfly from Britain is due chiefly to this cause."

There are separate indexes of English and Latin names; but we are sorry that the scientific names are not associated with the English ones on the plates, as they are in the text, more especially as many of the so-called English names are merely coinages not popularly current.

Where Wild Birds Sing. By James E. Whiting. London: Sydney C. Mayle.

The author of this volume describes it in his preface as a "record of his love for 'The Earth, our Mother,' and of the lessons he has learnt during hours snatched from the daily demands of his calling as a working naturalist." It is a specimen of a class of work which has recently become very numerous, in which the writer describes Nature as she appears to his eyes. We cannot agree with all the author's statements; indeed, if we examine this little volume closely we may discover a good deal which is open to criticism. It is hardly correct, for instance, to talk of March as the month in which the Blackcap arrives, or to give "Buffo" as the Latin name for the toad. On the other hand, here and there we find some interesting notes. Mr. Whiting has seen the green woodpecker and nuthatch in the early morning in Bloomsbury, and he gives a good description of the awakening of a thrush. He evidently appreciates nature himself, and his vocation has enabled him to see a good deal of her. If a perusal of "Where Wild Birds Sing" makes others use their eyes and ears it will have served a useful purpose.

NATURAL HISTORY NOTES AND QUERIES.

Races of Mankind.—The Rev. H. N. Hutchinson (author of *Extinct Monsters*) is at present engaged in making a large collection of photographs from life of native races of all countries, including Pacific islands, to illustrate a popular work which he will publish next year with Messrs. Hutchinson & Co., 34, Paternoster Row, E.C. For this purpose he is willing to buy good, strong, and clear photos. of men, women and children—some in groups, others as single figures. Silver prints will be preferred. Readers of Nature Notes who have such photographs are invited to communicate with Mr. Hutchinson, through his publishers.

Maternal Instinct of Roe-deer.—Miss M. A. B. Fulcher, of Dereham, Norfolk, writes that in Gandersheim (Germany), where foxes abound, a sportsman, waiting to shoot a roebuck, saw a doe come out of the thicket with her fawn, followed by a fox. The fox overtook the fawn and sprang on to it, when the doe raised herself on her hind legs and so belaboured the fox with her forefeet, that he beat a retreat.

Widgeon breeding in Captivity.—Mr. George Rooper, of Nascott House, Watford, records the remarkable fact of a widgeon (*Mareca penelope*) sitting on seven eggs near his pond. The duck, he says, scarcely left her nest even for food, whilst the drake was very attentive, but never approached the nest, swimming about at a little distance. Five eggs were hatched and the young widgeons, comical self-possessed little black morsels, not bigger than walnuts, separated within four or five hours from leaving the shell, like a handful of peas, swimming rapidly all over the pond, snapping up flies or other insects on the surface, without heeding one another or their mother. It being impossible to feed them, two died; but the rest began in about a week to eat grass like their parents. The mother sailed about the pond, uttering a short discordant croak and to all appearance quite careless of the existence of her offspring, but evincing the greatest animosity towards the father of her family, attacking him violently whenever he approached. A brood of wild duck (*Anas boscas*), on the other

hand, feed and swim together, attended by their devoted mother, even when nearly full grown.

Young Thrush feeding others.—About eight weeks ago we caught a young thrush, which we trained. Later on we caught two more very young birds, and for some time the first young one would feed the other two. Such a thing I have never known or heard of before in bird life, and so thought it might interest your readers.

The Cedars, Sion Hill, Bath. ANDREW M. POOLEY.

Corn-crake.—The Rev. G. P. Griffiths, of St Mark's, Cheltenham, gives the following anecdote in his parish magazine for July :—"In cutting some grass, within twenty yards of our back door, we came upon a corncrake's nest with five eggs in it. The nest and eggs were laid absolutely bare. I went and looked at them, and was very sorry that we had disturbed it, however unintentionally. We did not, however, touch them nor move anything around them, but left them in their bareness. Later on in the day, when I went again, the nest was there, but the eggs were all gone ; we could not tell what had become of them, but looking around a foot or more from the nest, we found the eggs all collected together under a heap of the new mown grass. The bird had evidently rolled each egg from its exposed situation and then gathered them all into another extemporised nest under the hay."

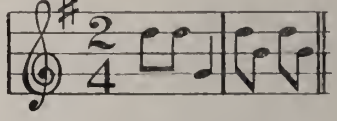
Blue-tit.—A blue-tit (locally, willow-biter) has built a nest in a letter-box belonging to Mr. Palmer of Frithville. The letter-box, which serves for three houses, stands two feet from the roadside, being fixed on a board set-up by the hedgerow. The bird enters by a slit 3 by 1¼ in. and often sits with the letters on its back. It has laid several eggs in a snug hole in the mound of moss with which it has filled the box. Two years ago it laid twelve eggs in this same box, hatching ten of them, but some boys found it out and stirred it up with a stick, with disastrous results to the young birds. The influence of a protective society is needed here ; a magpie and a cuckoo have been recently shot in the district and thirty sand martins' burrows plugged up with mud.

Boston, Lincs. W. C. C.

Jays.—I have just witnessed a—to me—novel bit of hawking in the shape of a jay trying to catch a bird upon the wing, evidently a fledgling whose flying powers were slight. At best a jay is a poor performer in the open, and this one's attempts to turn and twist in pursuit of its prey were even more ridiculous than those of a flock of starlings when catching flies. Several times did the jay overshoot the mark and clumsily turn round to make another snap at its victim in mid air. Meanwhile, the poor little bird held bravely, though slowly, on for a hundred yards or so, but at last lost heart, and flopped down on the grass, where it was at once captured and devoured.

Market Weston, Thetford. EDMUND THOS. DAUBENY.

Is the Blackbird Imitative?—I think the bird's phrase begins—or *is* more like this than like part of the boys' bugle-call. Nevertheless we were both struck with the bird's call.



S. P. HAWES.

36, *Quarry Road, Hastings.*

Queensland Hornets.—In the April number of NATURE NOTES there is an article on hornets which very much surprised me. I have watched the manners and customs of what we call hornets here in Queensland for many years and have never found them preying upon bees. Having very frequently hit them as they fly it has always been a larva they let fall, and in the nests we have broken open we have found nothing but larvæ and spiders. One large black and gold kind brings in green crickets as large as itself, but its nest, always under the floor, I have not been able to find. This season, with the aid of my youngest son, I began to make a collection and have succeeded in getting, of hornets 91

kinds, of bees 30 kinds, within a radius of a mile. Many of the hornets have apterous females. Perhaps some correspondent will kindly tell me (1) What is the difference between wasps and hornets? (2) Is there any work published on the classification, names, &c., of Australian hornets?

S. A. W. BARNARD.

Coomooboolaroo, Duaringa,
Rockhampton, Queensland.

Scarce Swallow Tail (*Papilio Podalirius*).—When looking over the cabinet of a neighbour a few days ago I saw a specimen of the above, and ascertained that it had "been given him about the year 1874 by a Mrs. Roden, and was said to have been taken in Cheshire at the beginning of the century, in the 'twenties, by her great uncle." This may be of interest to some of your readers, for there are several records of the capture of this insect in England about that time; though I believe I am right in saying it has not occurred for more than half a century past.

EDMUND THOS. DAUBENY.

Market Weston Rectory, Thetford, Norfolk.

The Transport of Seeds by Seawater.—Seeing that much attention has of late been bestowed upon the problem of the transport of seeds and fruits by water—a problem of great importance to botanical geography—a trifling observation of ours may possibly be accorded notice in NATURE NOTES. A few days since, on a beach between this place and Fowey, where wreckage usually comes ashore, we found a number of maize cobs, which had presumably drifted across in the Gulf Stream; whilst—and this is the reason for recording the fact—we found one seedling plant of maize established on the beach. It thus appears that the maize fruit may survive a long voyage in salt water. We propose to keep this beach under observation, in the hope of finding other seedlings similarly established.*

F. H. PERRY COSTE,
MAUD PERRY COSTE.

Polperro, Cornwall.

Struggle for Existence.—We have a sycamore tree (*Acer Pseudo-platanus*) growing on our garden wall. It is now three years old and in a flourishing condition, being full of large green leaves, is about three feet in height, and more than that in the spread of its branches. So, at present, it shows no sign of being dwarfed in any respect. The wall is covered with ivy, which no doubt retains moisture to the roots of the young tree. It appears doubtful at present which will prove conqueror, whether the wall will cause the tree to die or become dwarfed, or the tree, as its roots grow larger and stronger, will ruin the wall.

17, *Listria Park, Stamford Hill.* F. E. MARTIN.

NEWS FROM THE BRANCHES.

Croydon and Norwood.—Success has at length crowned the efforts of the Society and other local bodies in the matter of Bird Protection in the Croydon County area. An order, dated July 6, 1898, has now been issued under the Acts of 1894 and 1895, by which the close time for eggs and birds has been extended so as to include the whole of the year. Amongst the better-known birds which are thus protected are the lark, wren, cuckoo, starling, swift, swallow, martin, long-tailed tit, wheatear, wagtail, chaffinch and goldfinch. Amongst the omissions are noticeable the blackbird and the blue-tit.

The Committee of the Branch has appointed Mr. H. S. M. Grover, of Croydon, and 15, Coleman Street, E.C., to be Hon. Solicitor to the Branch.

At the Quarterly Committee held on July 18, it was unanimously resolved to oppose the proposed compulsory increase of the tithe of the gross receipts, now payable to the Central Council.

* Though, no doubt, the maize may have been in sea-water, it is at least possible that it may have come from the cargo of some ship in the neighbourhood. —ED. *N.N.*

SELBORNE SOCIETY NOTICES.

Field Club Saturday Rambles:—

August 6.—Start from Loughton on arrival of train leaving Liverpool Street at 2.41. Thence by Chigwell Row to Theydon Bois. Tea at Maypole Inn, Chigwell, about 5. Cheap return ticket to Loughton, 1s. Guide, Mr. S. Austin.

August 13.—Croham Hurst and the Addington Hills. Take return ticket to East Croydon. Victoria, 2.35; Thornton Heath, 2.55; London Bridge, 2.25. Tea at Sandrock Hotel, Shirley, about 5.30. Guide, Mr. E. A. Martin.

August 27.—Excursion to Burnham Beeches. Train from Paddington at 2 o'clock p.m. to Slough, thence to Burnham Beeches by coach. Through return third-class railway ticket, including coach, 3s. Trains and through bookings in connection leave—Moorgate Street, 1.33 p.m., return fare 3s. 6d.; Baker Street, 1.47 p.m., return fare 3s. 2d. Passengers per Metropolitan trains change at Praed Street or Bishops Road. Arrive at Burnham Beeches 3.25 p.m. Tea at Wingrove's Farm at 5 p.m. Leave Burnham Beeches per return coach at 6.45 p.m. Members wishing to make a whole day excursion can meet guide at Paddington 10.10 a.m., or at Slough 10.45 a.m. Guide, Mr. John S. Comrie.

September 3.—Leave Swanley Junction on arrival of train leaving Holborn Viaduct 2.37; Victoria (L. C. & D. R.) 2.42. Visit the Bee Farm, Farningham, thence through village to Eynsford. Single ticket to Swanley Junction, 1s. 5½d. Guide, Mr. H. W. Brice, *Hon. Sec.*, Kent and Sussex Beekeepers' Association.

Council and Committee Meetings:—

The next meetings of the Council will be held on Tuesdays, August 2 and September 6, at 5.30; of the Magazine and Leaflet Committee on August 16 and September 20 and October 19, at 5.30.

Badges designed by Mr. John Fullwood. Prices: Brooch, 3s.; solitaire, 1s. 9d.; pin, 1s 6d.; pendant, 1s. 6d. These are especially useful as a means of identification between Selbornians when taking their holidays, or at country Field Club Rambles.

ANSWERS TO CORRESPONDENTS.

W. Johnson.—*Silene Cucubalus*, the Bladder Campion, and *Vicia Cracca* the Tufted Vetch.

F. E. Martin.—*The Journal of Botany* (West, Newman & Co.), *The Annals of Botany* (Clarendon Press), the *Gardeners' Chronicle*, or *Science Gossip* (Simpkin Marshall) will best meet your wants.

Beatrice Banks.—We do not believe that animals are skinned alive for the manufacture of gloves.

Rev. A. H. Courthope.—1, 2, *Euphorbia Paralias;* 3, 4, 5, *E. portlandica.*

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S. As he will be out of town during August, they should, from July 25 to August 31, be sent to "care of MESSRS. JOHN BALE, SONS & DANIELSSON, Great Titchfield Street, W." Letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 105. SEPTEMBER, 1898. Vol. IX.

SELBORNIANA.

Financial Position of the Society.—From the report of the Finance Committee on their examination, at the request of the Council, into the present grave condition of the Society's finances it appears that, owing to the entirely inadequate income of former years, we are saddled with a heavy debt to our printers, although each year's income is now nearly sufficient to meet our current expenditure. It is most desirable that our work should not be hampered by this incubus; but that, instead of being thus crippled, we should be able to enlarge the scope of our efforts, as, for example, by the issue of leaflets. To place the Society's finances on a really satisfactory basis about £300 is required. To raise this sum three proposals were made by the Committee, first, an earnest endeavour on the part of all to get new members: second, special donations to the Deficit Fund; and third, the increased contribution from the branches, which is to come shortly before a Special General Meeting for discussion. It is not necessary to raise the whole sum at once; but if it could be got together within the next three years, the beneficial effect upon our utility as a Society cannot be doubted.

Committees.—The lists of members of the Committees of the Society given on p. 124 were taken in error from an unrevised Report. They should have been as follows:—

The President, Trustees, Vice-Presidents, Editor, Treasurer and Secretary, are (*ex-officio*) members of all Committees.

Field Club.—Mrs. Percy Myles, Miss Edith J. Temple, Rev. H. E. U. Bull, Messrs. W. Carpenter, George H. Edwards, Edward A. Martin, G. B. Milne-Redhead, H. W. Ravenshaw, R. Marshman Wattson. *Hon. Sec.*—Mr. Ernest A. Nash.

Finance.—Mrs. Percy Myles, Messrs. G. H. Edwards, A. Holte Macpherson, Edward A. Martin, H. W. Ravenshaw, and G. B. Milne-Redhead.

Magazine and Leaflet.—Mrs. Percy Myles, Miss Edith J. Temple, Messrs. F. W. Ashley, George H. Edwards, Basil Martin, E. A. Nash, and G. B. Milne-Redhead. *Hon. Sec.*—Mr. Edward A. Martin.

Portmadoc, Beddgelert and Rhydden Light Railway Scheme.—Miss Blanche Atkinson, an active member of our Barmouth branch, whose excellent pamphlet, "What are the Duties of Selbornians?" should be procured and read by every member of the Society, has unfortunately had only too strong a reason for active exertion of late. Time only permitted of our inserting the petition which she had prepared, against the very obnoxious scheme for a light railway through the lovely Pass of Aberglaslyn, as a flyleaf in our last number. The Commons Preservation Society and the National Trust are co-operating with our Barmouth branch in opposing this scheme, and we hope every member of the Society will add his name to the petition, which, by the way, has already been signed by Mr. Ruskin and by Mr. Watts.

Protection of Birds.—We have received an appeal from the Society for the Protection of Birds, of which the two following are the most important paragraphs:—

"The Committee of the Society for the Protection of Birds are convinced that the objects of the Society would be greatly helped if the assistance of landowners, shooting tenants, and farmers could be obtained, as, unless united action be soon taken, many of the country's birds, especially the rare birds of prey, will shortly become extinct. This, most people agree, will be a matter of universal regret, as well as a great loss to the Avifauna of the United Kingdom. It is only through the co-operation of gentlemen possessing shooting and other rights over land that it is possible to effect any real improvement in this direction; and their assistance would, in the opinion of this Society, be best given by their not allowing keepers and other persons on the land a free hand as to what birds may be killed, which is often the case at present, but, on the contrary, by giving strict instructions as to *what birds only* may be destroyed, which should properly be only those birds that, from their abundance in any particular district, may do real harm."

"The Committee also desire to draw your attention to the use of the pole trap, which ought in no case to be allowed, because, even if a landowner wished to preserve rare birds of prey, this trap could show no such discrimination. It is, besides, a most cruel instrument, because, if it is not examined regularly, any bird caught in it may hang for days in misery, and on this account this trap has been prohibited on many estates."

Kindness to Animals.—The Rev. F. Lawrence, Hon. Sec. of the Church Society for the Promotion of Kindness to Animals, writes, from Westow Vicarage, Kirkham Abbey, York, to say that he will be glad to send sermons and lesson-notes to any friends of animals for distribution amongst preachers and teachers.

TO A "FEATHERED WOMAN."

Dear Madam, believe me, those ornaments placed
In the hat that you're wearing are not in good taste.
In *themselves* they are beautiful—exquisite. True,
But, Madam, the contrast they offer to *you!*
Is it wise, I would ask you, to *make* us compare
The beauty you *want* with the beauty you *wear?*

And may not such comment as this give you pain,
"Her *feathers*, how lovely! Her *features*, how plain!"
No setting's too costly the diamond to hold,
But who'd put a flint in a circlet of gold?
Or who (not the artist) would wish "a good light"
On a daub that had better be hidden from sight.
My meaning (in case you don't catch it) is this,
Be a little less gaudy, you'll look less amiss,
"Like to like." Let your dearth in a desert be hid,
For, being less noticed, 'twill be the less chid.
Then out with those plumes of the "paradise" bird!
A "houri" *might* wear them, but *you*—It's absurd!
And the egret's light, nid-nodding, feathery snow
(Unkind to the parchment complexion below)
Cut it out! And the humming-bird's radiance forswear,
Out-gleaming the chemical gleam of your hair!
Oh hard-favoured "fair one" and is it for *such*
That *such* beauty must cease like the dewdrop at touch?
Nature's animate gems, "living sunbeams,"—ah me,
Must they perish for ever and perish for *thee?*
Oh, if not for shame, for *propriety's* sake,
Be a little more nice in the choice that you make.
There *are* birds less removed from the rank that *you* fill,
A sparrow or two would not suit you so ill.
Then the neck of a vulture if skilfully twined
Round your own would, in beauty, scarce leave it behind,
A swan's would condemn it; yet (might *I* but choose)
On your *head* there should nestle the head of a goose.
Then the tongue of the daw and the scream of the jay,
And the foot of the crow and the peacock's "display,"
You have *them*. Ah, would you but take them away,
And leave in their place the *fair* things that you *slay!*

EDMUND SELOUS.

Wamil Hall, Mildenhall, Suffolk.

PROGRESSIVE HUMANITY.

BY THE EDITOR.

IF we had not been amused we might have felt indignant at the assurance manifested in the July number of our contemporary, *Humanity*. "We welcome," it says, "the adoption of humane principles by the Selborne Society." It then goes on to quote from our President's address, delivered at our Annual Meeting, his reference to the dying words of Mr. Gladstone, and concludes, "we may now confidently hope that our Spurious Sports Bill will have the Selborne Society's support." On reading this we were tempted to exclaim, in what from its recent use we may term ecclesias-

tical Latin, "*Quantam maxillam!* What cheek!" For what principles other than humane does the writer imagine the Selborne Society to have ever existed? Can he have read the very passage from Sir John Lubbock which he prints? Sir John said that Mr. Gladstone's words, "Kindness, kindness, kindness, nothing but kindness on every side," were no doubt "an utterance of gratitude on his part, but as a guiding principle of life it expressed the ideal of the Selborne Society." What evidence is there here of the adoption of any new principles? The president of a society simply quotes the words of a great man recently dead, as illustrating what always has been, and always will be, the ideal of the society over which he presides. Is not the writer in *Humanity* aware that many members of the Selborne Society are also members of the Humanitarian League, and that many others have already done all in their power to support the Spurious Sports Bill? We may not always endorse every opinion expressed by a contemporary; we may doubt, for example, whether it would have been easy to convict the rat-worrier charged at Westminster, to whose case reference was made both at our Annual Meeting and in the pages of *Humanity*, under the Spurious Sports Bill, had that measure been already law: we may not care to advocate vegetarianism on humane grounds in the English climate; but surely it is better for the advocates of humanity to consider how they can co-operate rather than how they can criticise one another's methods.

Another thought was uttered at our Annual Meeting which we would gladly emphasise and illustrate. Sir Edward Fry suggested that it was a happy sign of the progress of the public conscience in such matters that, though Martin's Act was a comparatively recent addition to the statute-book, it was already being criticised as too narrow in its scope, confined as it is to cruelty to domesticated animals. This is the progressive humanity of which we would now write. We have, we are glad to say, received several letters of protest against our even printing Mr. James Partridge's letter on his shooting a kestrel (p. 137), letters which declare our editorial censure conveyed in the heading, "A Gun instead of a Field Glass," to be far too mild for the occasion, and which couple Mr. Partridge's killing a hen kestrel in the breeding season with Mr. Seton Karr's remarkable methods of manifesting his love for all dumb animals. "A. H. W." writes from Richmond:—

"Unhappily that time must still be very remote when men of education and intelligence continue to see no wrong in showing their love for wild creatures by killing them. . . . Since Mr. Partridge's unhappy shot there is now one beautiful creature the less in North Devon—one kestrel less to gladden the eyes of nature lovers as she shoots along on her swift pinions or hangs poised in mid air. . . . No doubt Mr. Partridge would claim that he yields to none in his love of all wild creatures, but such love must be like that of the Conqueror for the red deer in his New Forest—love for them for the pleasure of destroying them. . . . Deliberately to kill rare and beautiful creatures in this anything but wild England of ours becomes, it seems to me, an act of wanton and malicious destructiveness, worthy only of the brutal natures of urchin boys, and an

infringement of the rights of fellow-citizens, inasmuch as we all have a right to the enjoyment of the beautiful things of nature, and save under special circumstances no one has the moral right to deprive us of them, whatever licence the law may allow him. I believe that people in England and America are becoming less cruel, less barbarous and heartless than they were. That seems certain, and there is comfort in the reflection. But there is much, much work yet to be done in the way of refining and civilising before educated men and women shall one and all instinctively regard with abhorrence the wanton destruction of beautiful life of any kind. But that is the ideal which the Selborne Society is nobly striving to realise. . . . As for Mr. Seton-Karr's 'God-planted instincts of the chase,' I would suggest the correct amended formula would read 'Devil-planted instincts of destruction.' . . ."

We should be reluctant to adopt our correspondent's somewhat Manichæan explanation of the instincts of the chase, and should personally prefer the Darwinian explanation delightfully put forward by Dr. Louis Robinson in the opening pages of his "Wild Traits in Tame Animals," in which he shows how our primitive ancestors depended on the cultivation of these very animal instincts for their daily safety and provender; but surely we have left this stage of being behind us. As students of nature we should remember what Darwin has himself recorded as to his abandonment of shooting, of which he had been passionately fond. "I discovered," he writes, "though unconsciously and insensibly, that the pleasure of observing and reasoning was a much higher one than that of skill and sport." We should hope that some may feel repulsion not only at Mr. Seton-Karr's tethering a donkey as live-bait for lions, but even at Izaak Walton's advice as to how to use a frog "as though you loved him"; and that we may all

> "Move upward, working out the beast,
> And let the ape and tiger die."

BROCKWELL PUBLIC PARK (HERNE HILL).

How strange that never on the mountain top.
Or in the stillness of the untrodden moor,
Or where the sad, invariable sea
Endlessly beats upon a desolate shore,
Have I felt Nature's heart so close as here
Beneath this old wych elm in Brockwell Park!
Its graceful boughs are dark and tremulous
Against the evening sky, and photographed
Upon the greensward by the setting sun.
Its giant form is nebulously cast,
Dappling the browsing sheep, and spreading far
Adown the grassy slopes, but cannot reach
The gleaming pool beyond, or dim the hues
Of the gay folk who saunter by its marge,
And move about among th' ancestral oaks.
There lies the old wall'd garden—do you know
A brighter or a sweeter? As in days of old
The dial still records the fleeting hour,

The fountain ripples, and the mignonette
And scented eglantine perfume the air.
No jealous guardian of his master's rights
Expels the stranger, all can now enjoy,
Where two or three of yore.—(Rank Socialist I!
Who would that some day every English park
Should be the people's, and the child be free
To gather primroses in every wood,
Where palings now, and reckless barbs impede,
And well-arm'd keepers tramp, and scold, and fight
Through the long seasons, and on hungry nights
Murder is done, that when the year is old
Their noble masters may have birds to slay).
But this is paradise to yon wee maid,
Who,—Sunday privileg'd,—her father's hand
Confiding grasps, and garrulous propounds
The strange enigmas of her budding mind.
No ugly sounds of steam or wheel impair
Summer's divine contentment—beetle's hum,
Rustle of leaf, and caw of homing rook,
Serve but to lull the drowsy mind to rest,
Until the Sabbath bells,—familiar tones,—
Surprise the languid senses, and anon
The mists of time roll back confusedly,
The chequer'd past revealing, and my soul
Is prey once more to restless vague desire.

M. J. T.

Dulwich, July, 1898.

NATURE'S PARADISE.

IT is my purpose to describe a very charming copse in Surrey, which is a favourite haunt of mine. It is some two hundred yards from the road, which is little frequented, and the nicest way to get to it is by a narrow little water-course which runs between two high sloping banks which are now clothed with the bloom of many wild-flowers. As you walk along its edge you see several stickle-backs dart from one clump of weeds to another, or a caddis-worm slowly dragging itself and its home along the bed of the stream. As you near the copse the banks are clothed with hawthorn bushes, and on peeping into one of these which overhangs the water, you espy an exceedingly slender nest—at first sight a mere collection of a few bits of hay—but this is the work of the blackcap, whose sweet song almost rivals that of the nightingale. It contains two mottled brown eggs, harmonising to a great extent with the surroundings. A little further on you almost tread into a moorhen's nest, which in this case is a mere cup-shaped hollow in a tuft of grass close to the water's edge. As

yet there are no eggs in it, but it is evidently fit to receive them. Already the copse is reached, one side of which flanks the stream and appears a dense mass of bushes too thick to penetrate. Out of this you see a cat hurrying, no doubt bent on escaping your notice: she at any rate has no right there, and many a defenceless young bird or a weakly rabbit could bear testimony to her partiality for a life of freedom. Do not blame her, it is only a reversion to Nature, she is merely doing what her instinct prompts her to; allow her to enjoy herself now, in all probability she will ere long fall a victim to the keeper's gun or die a lingering death in the teeth of a steel trap. There is no lack of bird-life, however, to attract one's attention, as the white-throats and nightingales are making the place ring with their melody, and the chiff-chaff is repeating its well-known notes: the blackbirds and starlings are also well in evidence, fully occupied with the worries of a large family. As you walk through a large clump of nettles, almost rising to your waist, you rouse a hen blackbird, which goes off with a startled cry. There below you is her nest, built right on the ground, and therein are three eggs and a tiny young one: the eggs are already "pipped" and require but a few hours to hatch. But now the hitherto slender streamlet widens into a large pond, completely surrounded by bushes, situated as it is in the centre of the copse. Your presence as yet is not noticed, and several pairs of moorhens are floating idly on the water, while others are creeping in and out of the reeds flirting their tails in contentment. A kingfisher, too, hurries across the water, bearing something in his beak to the far corner of the pond. As you walk along the edge the alarm is sounded and the moorhens now uneasily seek the shelter of the bank, along which they run, thinking that they are concealed by the undergrowth. Now you wend your way along a small by-path intersecting one portion of the copse. Overhead are several tall fir-trees, whose thick massive branches almost obscure the sun. These the wood-pigeon claims as its own and therein builds his rough platform of sticks. As you casually poke your stick into some undergrowth you notice a bright eye fixed upon you, and this betrays a hen pheasant sitting closely and looking very comfortable. Leave her undisturbed, as the keeper would resent your intrusion on his special property. Within a yard or two of this a round nest is seen, almost hidden by the foliage: as you advance your hand a tiny little yellow bird darts out and creeps quickly along the ground out of sight. The feather which she has brought out in her hurry shows the beautiful structure to belong to the willow warbler and this is put beyond doubt by the little red-speckled eggs—six of which lie snugly at the bottom. Passing on, we again arrive at the little stream, but this time it is at the other end of the pond, and across it is a rustic bridge made by the keeper for his convenience. As you stand on this and look towards the pond you notice a slight

ripple, and then you see a water-rat pushing his way from one bank to the other. For a moment he rests on the bank and looks at you and then he disappears into his hole, which is situated just above the level of the water, beneath a clump of garlic. Crossing the bridge and making for the outside you start a tree pipit from her nest in some rank grass, wherein are six eggs, one of which evidently belongs to the cuckoo, which has been uttering its well-known cry all the while you have been in the copse. One more nest awaits you, that of the tree creeper, built firmly between the trunk of an oak and a thick ivy-shoot. It is only possible to see its contents by pressing the side of the nest down, and then its three little eggs are seen, which are white with pronounced red spots at the larger end.

It is now time to take leave of the delightful spot, which appears like a sea of blue owing to the many bluebells which are gently moved by the breeze, and with a farewell look at the pond studded with water lilies and the yellow iris, you walk along the path which borders it, and then emerge once more near the little stream, following which you speedily leave the many sounds expressive of the happiness you have left behind you.

Fylton Rectory, near Bristol. A. C. Mackie.

WHITE HERONS AND WORN-OUT HORSES: WHAT CAN THE LEGISLATURE DO?

(Reprinted, by the author's permission, from the *Manchester Guardian*.)

TO all lovers of bird-life and to all who desire to see some of the most beautiful forms of that bird-life preserved to us it must be a matter of sincere satisfaction that the agitation against that murderous millinery which *Punch* has lampooned and G. F. Watts has lately made the subject of a picture should at last have taken definite shape and have appealed not without result to the Legislature. It is true we are in our sumptuary laws behind America, but at least we appear to have in our members of Parliament hearts that can be touched and souls that can feel for the wrongs that fashion has hitherto inflicted without challenge upon a defenceless creature. We can afford to allow the writer in *Blackwood's Magazine* to twit the age for becoming too soft-hearted for national enterprise when a hard-headed House of Commons can take up the gauntlet in behalf of the *Ardea gracilis*. It was believed that that little white heron of Florida is rapidly becoming extinct because the women of England delighted to deck their heads and bonnets with the nuptial plumes of the mother-bird. These could only be obtained during nesting-time, and to obtain them meant the destruction by a most cruel and prolonged death from sunstroke and starvation of all the nestlings. But the women of England were not the only offenders. It was realised that a very large

part of our military adornment was made up of these same nuptial plumes of the *Ardea gracilis*. It was clearly of little avail to appeal to the ladies in time of peace if their husbands and brothers were to go forth to fight for them and their hearths and homes clad in the plumes which they had discarded. The agitation appeared to the female mind to be unjust, or at least one-sided. But Sir John Lubbock was equal to the occasion. On the 23rd of last month he asked the Under Secretary for War if he was aware that the so-called osprey feathers worn as plumes by certain regiments were only developed by and were stripped from the birds during the breeding season, and that the destruction of the old birds involved the starvation of the young ones; and if he would consider the desirability of abandoning the use of a decoration which involved the slaughter of birds under circumstances now shown to involve such cruelty. Mr. Brodrick replied: "Orders have been given that plumes composed otherwise than of so-called 'osprey' feathers shall be preferred, with a view to obtaining the sanction of Her Majesty to the abolition of the osprey plumes worn by the commissioned officers in certain regiments"! He added that the selection of a satisfactory substitute was difficult, and that some delay might occur in effecting a change. If the *Ardea gracilis* is to be saved, that delay must not be long. Meanwhile one of the greatest stumbling-blocks in the way of the reformers who wish to see the last of murderous millinery in our land has been removed, and one can now with a quieter conscience ask the fair sex to follow a good example. The writer of these lines was standing a week ago with G. F. Watts before his as yet unfinished picture "The Altar of Fashion." An angel, shuddering at the sight of so many beautiful birds' wings heaped senselessly and cruelly upon that altar, hides her face in her hands, and he heard the aged painter say—and the blood flushed to his face as he said it,—"I say deliberately that the savage may be forgiven, but for these ladies of our land who, knowing better, will still slay the innocent blood to bedeck themselves with feather-finery, where is there any place of forgiveness for them? It is horrible, it is cruel, it is monstrous, it is unfeminine, it is degrading."

But if the Secretary for War is considerate enough to do what he can to prevent cruelty and wrong among the cane-brakes of Florida where the *Ardea gracilis* breeds, it is now within the bounds of hope that the Secretary for Peace, the member who presides over the Board of Agriculture, may also take heart of grace and do for the outworn and aged horses of our own land what Mr. Brodrick has done for the Florida heron. It is now clear that nothing but the act of the British Legislature can put an end to the hideous traffic in horseflesh which, for the profit of the meat-juice manufacturer in Belgium, is now going on between our shores and the Belgian ports. The Society for the Prevention of Cruelty to Animals recently interviewed Mr. Walter Long, who suggested that Mr. Colam, the secretary, should

communicate with the Belgian Government. The Belgian Minister of Agriculture and Public Works now writes that the Government has no control over the vessels of transport, and cannot see how the transporters of these old horses can be dealt with; but he adds that the laudable object of putting an end to the traffic or of preventing the cruelty of it would best be attained if the British Government would forbid the embarkation of any old and worn-out horses incapable of bearing the passage. Further, such a step would not only put an end to the shocking sight of the march of these unhappy creatures to the place of shipment, but would at the same time "check the spread of glanders, from which we find so many suffer here." The view taken of the matter by the Belgian Minister is supported by Sir Howard Vincent, who, after a careful survey and personal inquiry in Holland and in Belgium, says: "I repeat, and most emphatically, that the fault is British, and only British. It is for the British Government to act in Great Britain and, if need be, abroad, through its diplomatic and consular officers." The gauntlet is thus fairly thrown down. The House of Commons is in a humane mind, as evidenced by its action in regard to the osprey plumes and the white heron of Florida. Will no member of Parliament come forward to pick it up in defence of the out-worn servants of the land, the horses in whose welfare we take a national pride?

H. D. Rawnsley.

REVIEWS AND EXCHANGES.

The Mammals, Reptiles, and Fishes of Essex: A Contribution to the Natural History of the County. By Henry Laver, M.R.C.S., F.S.A., F.L.S. With eight full page and two half page illustrations. (Essex Field Club Special Memoirs, vol. iii., 1898.)

The Essex Field Club is to be congratulated in having, by the addition of this volume from the pen of Dr. Laver to Mr. Christy's "Birds of Essex"—the second volume in the same series of special memoirs, issued in 1890—given to the world a complete catalogue of the vertebrate fauna of the county. The present volume is a good deal more than a catalogue, though we should have been glad of an even fuller account of some of the more interesting animals, the deer and the viper, for instance. Is Dr. Laver correct in stating (p. 5) that "the only extinct British mammals of whose existence in Essex we have any direct proof, are the wild swine, the wolf, and possibly the beaver?" or does he mean "recently extinct"? There is no doubt about the former abundance of the beaver, as pointed out by Dr. Woodward ("The Ancient Fauna of Essex," *Trans. Essex Field Club*, vol. iii., p. 8), but, though these are beyond the scope of Dr. Laver's work, the same author also records the horse, reindeer, elk, goat, brown bear, hippopotamus, musk-ox, marmot, and several species of ox, rhinoceros and elephant, and we think others might be added from the Walton-on-the-Naze Crag. Dr. Laver's "Introduction" (p. 4) contradicts, we fear, his text (pp. 73-74), the red deer "brought back from Windsor to re-stock Epping Forest" having since been destroyed; but perhaps the small herd at Takeley Forest, also mentioned on p. 74, may maintain the claim of the species to a place in the wild fauna of the county. The value of this interesting volume is much enhanced by its charming illustrations, mostly from the pencil of Mr. H. A. Cole. We hope that in a future edition a table of the species recorded will be added.

On Plain and Peak: Sporting and other Sketches of Bohemia and Tyrol. By Randolph Ll. Hodgson. Illustrated by Her Serene Highness Princess Mary of Thurn and Taxis, and from photographs. (Archibald Constable & Co., 1898, 7s. 6d.)

THIS lavishly illustrated book—it contains no less than thirty-six plates, comprising several interesting views of chamois and roe-deer—will, no doubt, be of interest to gunners. There is little in the series of papers but records of experiences whilst stalking. Perhaps the one redeeming paragraph is this which concludes a somewhat repulsive chapter entitled "My First Stag":

"But as I looked at my prize, lying lifeless among the pine trees, with the soft eyes fast glazing, and the limbs, that had once borne him so swiftly, stiff and stark—was there not beneath my feelings of joy and pride at the death of this—my first stag—a tinge of sadness—a little ghost of a feeling of something like *remorse?* I think so!"

In "Some Shooting Statistics" that Mr. Hodgson gives from official sources, it looks strange to see 12,837 thrushes, shot in Hungary in 1894, and 647 marmots, shot in Austria in 1892, figuring as game. It seems regrettable to see 8,144 chamois in the same list as the latter; and, though owls are said to be spared on most estates in Bohemia in 1895, 25,312 hawks, falcons, buzzards, &c., were killed in that country in the year, and over 29,000 owls and 100,000 hawks appear in the list of Austrian "vermin" for 1892.

Bird Neighbors: an Introductory Acquaintance with one hundred and fifty birds commonly found in the Gardens, Meadows and Woods about our Homes. By Neltje Blanchan. With Introduction by John Burroughs, and 52 coloured plates. London: Sampson Low, Marston & Co., 1898. Price 12s. 6d.

WE cannot help thinking that Messrs. Sampson Low, Marston & Co. have been most unwise in issuing this work under the above title with no indication of its purely American character beyond the spelling of "Neighbors," the fact of the introduction being by John Burroughs, and a minute "Printed in New York, U.S.A." on the back of the title-page. Mr. Burroughs is guilty of hyperbole when he writes that the reader "will find these colored plates quite as helpful as those of Audubon or Wilson," and Miss Blanchan's preface appears almost disingenuous when she writes that "the specimens examined and described were not the faded ones in our museums, but live birds in their fresh spring plumage, studied afield," seeing that the illustrations are obviously reproductions from photographs of stuffed—and not very well stuffed—specimens, with "faked up" photographers' backgrounds. The book is not intended to be complete or scientific: birds of prey and water fowl are omitted, 150 species being only a small fraction of the avifauna of New York; and though lists of "bird families," birds arranged according to their habitats, their seasons and their size, are given, the main classification adopted is based upon "color." The text is mainly a compilation; and, with the plates, may well serve a useful purpose in New York, as affording a cheap means of obtaining a bowing acquaintance with the commoner birds. The illustrations are good examples of the three-colour process, and when we see the moderate price at which so pretty a book can be produced, we wish we had a similar work dealing with our bird neighbours here.

A Dictionary of Bird Notes, to which is appended a Glossary of Popular Local and Old-fashioned Synonyms of British Birds. By Chas. Louis Hett. Jackson's, Market Place, Brigg, 1898. Price 2s. 6d.

OUR letter bag makes us well aware of the interest taken by Selbornians in the notes of birds, so that we welcome most enthusiastically Mr. Hett's excellent little pocket manual. Strongly bound, with rounded corners, and printed on good paper, but only on one side of the page, so that each alternate page is available for the reader's own observations, its "get up" reflects as great credit upon a provincial publisher as does its unassuming but business-like contents upon its author. The bulk of the little volume (52 pages) is occupied by the dictionary of notes in two parts, viz., note—bird, bird—note; the glossary of English synonyms occupies 37 more pages, printed in double columns; then follows a numbered list of the 376 birds accepted as British by the British Ornithologists' Union in

1883, in scientific order with their scientific names; a list of terms applied to wild fowl to express number; and a "post scriptum," which we cannot do better than reproduce *in extenso*.

"The destruction of an uncommon bird for the purpose of identification is a barbarism. This is more especially so in the case of those which if left unmolested might remain to nest. It is hoped that the matter in the preceding pages may prove an 'aid to identification without slaughter.'

"It is my desire to collate still further information for the assistance of the outdoor observer in recognising birds without injuring or even alarming them. Any assistance which my readers can give me will be highly appreciated.

"The following example shows the description of information which appears desirable.

"HAWFINCH.—Might be mistaken for a chaffinch, but for no other bird, although bearing a slight resemblance to a waxwing. It differs from the chaffinch in being larger, having only one white bar on each wing, and in the more conspicuous peculiarities the parrot-like bill and the white tail feathers. The latter present the appearance of a square white patch on the upper side of the tail. The general colouring is most harmoniously blended. The song is of little service for the purpose of identification. The notes are soft and low, usually uttered when perched on a tree. No particular characteristics when singing have been recorded.

"Although the above gives an outline of the scheme it is subject to modification, and probably some of my correspondents may be able to suggest improvements.

"In the case of the warblers, the time at which any bird is likely to be heard, the situation in which it sings, and its behaviour when singing, are of the greatest importance. The great similarity in the colouring and the hideling habits of many of this species make identification extremely difficult, when the song is not known. Charles Louis Hett, Springfield, Brigg."

As an example of the interest of this subject a correspondent writes to us: "I daresay some of your readers will smile on hearing of a bird which might not inaptly be called the Biscuit-Bird, one of whose notes literally equals the pronunciation of "peak frean." I heard it the other evening out in the open, but as it was close upon sundown I could not even with my glass make out its markings. By the build of it, however, I conjectured it to be a thrush, and both note and conjecture, though not included in his book, have since been confirmed by Mr. Hett from personal observation."

In conclusion, we can only express a hope that our members will speedily exhaust the first edition of Mr. Hett's book and be sure to carry it with them on their Field Club rambles.

Etudes sur les Fourmis, les Guêpes et les Abeilles. By M. Charles Janet, Limoges.

BY the courtesy of the author we have been favoured with a number of pamphlets mostly dealing with ants, bees, and wasps, but treating these insects in that delightfully fresh, varied and complete manner which is characteristic of the best traditions of French science. He treats of their anatomy: he breeds them in artificial nests: he describes how other animals prey upon and mimic ants; and he enumerates no less than 1,246 "myrmecophilous" species of arthropods. The introduction to his *Note* 14, *Rapports des animaux myrmécophiles avec les fourmis*, is of such interest to the general biologist that we append a translation *in extenso*.

"When one has to speak of ants and the numerous species of animals that live in their nests, the word *hôte* recurs at every moment. Unfortunately, like the Latin word *hospes*, from which it is derived, it means both he who gives hospitality (*stabularius*, he who lets furnished lodgings, in German *Wirth*) and he who receives it (*inquilinus*, he who is lodged under the same roof, in German *Gast*, *Hausbewohner* and *Inquilin*). Here, in order to avoid as far as possible any confusion, I prefer to use the word *hôte* for the animal who provides the lodging (*stabularius*, *Wirth*), and I avoid using it for the animal who is lodged (*inquilinus*, *Gast*).

"If one only considers as real myrmecophiles those animals which, for whatever reason, actually seek the society of ants and come of their own accord to live in

their nests, we must exclude from myrmecophily :—(1) the use by ants of the excrement of Aphidæ, or of certain secretions of the caterpillars of the Lycænidæ, animals which are sought after by ants but which on their side never in the ordinary way seek these latter. (2) The destruction of ants by myrmecophagous animals which do not live in the nests and may be considered simply as their enemies. (3) The introduction into the nests of the pupæ of ants of a different species destined to furnish them with allies or slaves. (4) The mimicry of ants by divers insects which find a protection in their resemblance to such well-armed animals. . . .

"The relations of the true myrmecophiles with their hosts may be classed under the following categories : parasitism, phoresis, myrmecoclepty, synechtry, synœcy, myrmecoxeny.

"I class as *parasites* those myrmecophiles which live on or in the bodies of ants or their offspring and are nourished at the expense of the latter.

"The *Phoresis* of Lesne* comprises those cases in which the myrmecophile uses the ants in order to transport himself from one place to another.

"*Myrmecoclepty* comprises those cases in which the myrmecophile, in spite of the manifest hostility of the ant, comes surreptitiously in order to steal from him his stored-up food or his offspring, in order to devour them.

"The *Synechtry* of Wasmann is the case of those myrmecophilous beetles which live in ants' nests and devour their inhabitants. The *Synœcy* or *Symphily* of Wasmann is the case of those myrmecophiles which, without having direct relations with ants, are tolerated by them and live in their nests, where they may find, not only such broken victuals as their hosts do not want themselves, but warmth, shelter, and indirectly, actual protection.

"The *Myrmecoxeny* of Emery is a true *Symbiosis*,† if one designates by this name the relations of two species which find a mutual advantage in their relationship. The myrmecoxenes are cared for and fed by their hosts, and provide these latter with secretions for which they seem extremely greedy."

Board of Agriculture Leaflets 41, 46, 47, 48, 49.

We have received, through the courtesy of the Board, copies of their recently-issued leaflets on the Red Spider, or Spinning Mite, which attacks the hop, the Stem Eelworm, the Asparagus Beetle, the Pea Thrips, and the Fruit-Tree Beetle. These leaflets not only describe the life-history of these pests but also methods of prevention and remedies ; and it cannot be too widely known to cultivators that copies of any of them may be obtained free of charge and post free on application to the Secretary, Board of Agriculture, 4, Whitehall Place, London, S.W., letters of application so addressed not requiring to be stamped. Every village schoolmaster should procure them.

Year-book of the United States Department of Agriculture, 1897.

It is obviously impossible in the little space at our command to do anything like justice to an encyclopædic volume of nearly 800 pages—illustrated, besides woodcuts, by forty plates, many of which are triumphs of chromo-lithography—which the United States Government, with its usual liberality, sends to every one interested. Besides full statistics of the crops of the country, reports on the work done by the numerous divisions of the Department during the year, and many other papers, we notice one on "Popular Education for the Farmer," suggesting nature-teaching in rural schools ; another on "Every Farm an Experiment Station ;" one, illustrated with coloured plates of varieties of European

* *Transport mutuel chez les animaux articulés : Bull. Soc. Ent. de France*, 1896, vol. xlv., p. 162.

† If one thus restricts the word *Symbiosis* to the special case where there is a known reciprocal advantage which may go so far as to be a *sine quâ non* condition of existence for one or even for both the two species concerned, it becomes useful to have another term such as *hamabiosis* for the very general case of two species living normally side by side for any motive whatever, and with or without one-sided advantage or known reciprocity. Myrmecophily would then be the case of hamabiosis in which a species of animal seeks an ant ; and myrmecoxeny the case of symbiosis in which one of the two beings concerned is an ant.

fruits, on the "Substitution of Domestic for Foreign-grown fruits;" one on "Lawns and Lawn-making," indicating the usefulness of sheep in this respect; another, well illustrated, on "Hybrids and Plant-breeding;" one on "Edible and Poisonous Fungi," by Prof. Farlow, most of the species figured in which are also common with us; and one on the "Danger of Importing Insect Pests;" besides appendices on remedies, the preparation of insecticides, twenty-five most harmful weeds, nineteen of which are of Old World origin, with suggestions for their control, a hundred most valuable timber trees, food analysis, &c. We note in passing that the Department seem to have prevented the introduction of the woolly mullein as an addition to the list of weeds of European origin. We cannot help pitying the sixty or seventy young women who are apparently permanently engaged in the scarcely exhilarating pursuit of microscopically testing pork.

Missouri Botanical Gardens. Ninth Annual Report.

THIS is another sumptuous volume reaching us from the United States, containing 160 pages and 50 plates as the year's work of one public garden. The more important of the scientific papers it contains are "A Revision of North American Lemnaceæ," by Charles Henry Thompson, in which *Lemna polyrrhiza* is separated under Schleiden's genus *Spirodela*, and "A Revision of the Genus Capsicum, with especial Reference to Garden Varieties," by H. C. Irish, with 21 plates, the author following a hint of Asa Gray's in reducing all cultivated red peppers to forms of two species, *Capsicum annuum* and *C. frutescens*.

Pansies, Violas and Violets (Dobbie's Horticultural Handbooks), edited by W. Cuthbertson. Macmillan & Co., 1s. 6d.

THIS is a well executed manual by various hands, with a historical introduction by the Editor, a chapter on the botany of the group, dealing chiefly with their fertilisation, by John Ballantyne; one on the allusions to these flowers in poetry, by Jessie M. Burnie, and several chapters of practical advice for cultivators.

Off your Bikes! A Series of Rustic Rambles and Sketches, including a Rhymed Rigmarole, entitled "Rummy Dick's Ghost," a Legend of Leith Hill Tower. By Walker Miles. (The Rambler's Library, No. 2.) R. E. Taylor & Son, 1s.

ANY pedestrian will appreciate Mr. Walker Miles' practical directions, and all Selbornians will sympathise with the plea for foot-paths in the opening article of this little book, and thank him for his kindly words for our Society; but we think his guides to the North Downs, the South Downs, and Monmouth and Raglan, would have been more useful separately, and we do not care personally for his seventy-two pages of rhymed imitation, a long way after the Ingoldsby Legends. The book contains many pretty views, chiefly from Surrey and Sussex, and may well enliven the tedium of a solitary railway journey or a midday rest.

Knowledge for July and August maintains the general excellence of our contemporary's repute. In the former there is a continuation of the Rev. T. R. R. Stebbing's "Karkinokosm," and of Mr. Vaughan Jenning's "Botanical Studies," the latter dealing with *Mnium* as a type of the mosses; and in the latter Professor G. A. J. Cole has a geological paper on a corner of Wild Connaught, and Mr. Enock begins to deal with "Insect Miners." In each number there is an instalment of the Rev. A. S. Wilson's interesting description of "Self-irrigation in Plants," in which, however, we miss any reference to Mr. Grant Allen's suggestive essay, "The Root of the Matter" in his "Moorland Idylls," or to that striking illustration of his theme, the spirally inverted leaves of *Alstroemeria*.

Science Gossip for July and August, besides its usual array of valuable notes, contains a startling exposition of a new theory of the Glacial Period, instalments of a paper, by Mr. Tutt, on "The Origin of Species in Insects," and two of the papers read at the recent congress of the South-eastern Union of Scientific Societies, one, by Dr. H. F. Parsons, on "Plants and Animals of Different Soils," and the other, by Mr. C. Dawson, on "Natural Gas in Sussex."

The Animal World for July and August, with its full-page illustrations of nothing in particular, reminds us too strongly of a Band of Hope magazine or paper for children and those who read or think little, not that it does not contain

some interesting articles, such as that on Hedgehogs in the July number, and Colonel Sir Howard Vincent's valuable report on the export of old and worn-out horses in that for August, but that it would appear to have such great possibilities for more serious practical work. We hope that, after Father Lescher's letter, we shall hear no more nonsensical attempts to make the Catholic Church responsible for the prevalence of cruelty to animals.

Our Animal Friends for July and August has suffered somewhat from the war-fever recently so prevalent in the United States, though we need hardly say that we are in hearty sympathy with their denunciation of bull-fighting. Their valuable veterinarian papers were what we had in view just now when venturing to criticise an English contemporary.

The Naturalist for July and August, though valuable to local workers, contains comparatively little of general Selbornian interest, but there are notes on two cuckoo's eggs in one nest, on a young thrush being fed by a starling, and on Yorkshire herbal remedies.

The Irish Naturalist for July records the breeding of the marten in Co. Waterford, and an application to the Limerick magistrates to except gulls and mergansers from the Wild Birds Act on the ground of the damage done by them to the salmon and eel fry.

The Victorian Naturalist for June contains a valuable little paper on zoological nomenclature, entitled, "What's in a name?" by T. S. Hall.

Received.—*The American Monthly Microscopical Journal* for July.—*Rivista Politica e Litteraria* for July.

NATURAL HISTORY NOTES AND QUERIES.

Rats Stealing Eggs.—A short time ago you printed a notice of mine about rats stealing eggs near here under circumstances leading to the belief that they had been carried at least half-a-mile. I ended up with the query, "How did they do it?" This found its way into several newspapers, local and otherwise, and many persons wrote to me on the subject, stating all sorts of plans employed by these wily rodents. My brother, Captain Giles Daubeny, a well-known contributor to NATURE NOTES, suggests that the hens may have stolen their nests some distance from home. This the man who found the eggs thinks unlikely, for they were dug out of the rats' holes early in the year before vegetation sufficient to hide a nest had sprung up. The locality, too, does not lend itself to this supposition; and even if several nests had been stolen, my contention that the eggs had been carried long distances would still hold good.

Rats have been observed to form in line and hand eggs from one to the other out of a basket to a hole close by. This plan no doubt would answer for short distances, but one could not imagine their adopting it in order to place an egg here and there along a mile of ditching. It would involve an amount of time, labour and numbers out of all proportion to the gain, and I give rats too much credit for business habits to suppose they would waste their energies like this.

Rats have also been seen to roll eggs along with their forepaws. This would do when the ground was smooth, but other measures would have to be taken in rough, stony, or unlevel places; and these are what I want to find out.

Several of my correspondents, however, have quite made up their minds how the trick is done—at least, so I conclude from the confident nature of their communications. One gentleman tells me that the rat tucks the egg under his chin, and leaves me to find out how he then proceeds, whether hopping or walking with his awkward burden—a difficult process if a ploughed field has to be negotiated.

Along with several others, two ladies inform me that the rat lies on its back clasping the egg tightly somehow or other, while one or two friends take him by the tail and drag him along. This very common belief I have heard, lo, these many years! Is it likely that any animal would quietly submit to the ordeal of having his tail nipped and being rubbed the wrong way into the bargain? They would bump him terribly over rough ground, to the great danger of the egg; and

how long would hair remain on his poor back, or the skin on his tail? Then how would they themselves, both hanging on to his tail, proceed—backwards or forwards? This theory lands us in endless difficulties and conundrums, and I give it up.

I think it most likely that where long distances are concerned, the rat partly rolls, partly lifts the egg, according to the nature of the ground, and that he undertakes the work alone.

August, 1898. EDMUND THOS. DAUBENY.

Singing Mice.—Can any of your readers enlighten me about "singing mice"? A relation of mine now staying in an old house at Painswick writes that her sleep has been much disturbed by an uncanny sound which began late at night, and seemed to wander about her room. She was told at last that it was a singing mouse, but the reason of its singing was not explained. In Frank Buckland's "Log Book" there is a short account of these creatures, but he says, "the real secret of these musical powers in the mouse is not, I believe, known. Dr. Crisp, of Chelsea, informed me that he thought the singing was caused by the presence of a parasite in the liver. I have a specimen, in spirits, of a singing mouse, in which this parasite is certainly plainly visible, but I am not at all sure that other mice also, who are not musical, have not this parasite." If any one can throw further light on this mystery, I should be greatly obliged.

Cambridge Lodge, St. Albans. (Mrs.) ROSE TURLE.

Are the Wild Birds' Protection Orders to remain a Dead Letter ?—There is great possibility of this happening, as Mr. W. B. Gerish remarks, unless efforts are made locally to see them carried into effect. I agree that something should be done early next year, so that united action might be taken by those interested in a given locality. Children could at least be warned of the illegality, and so perhaps be diverted from adopting the profession of the bird-catcher before too late. Against the hardened adult I fear that little can be done. There are too many ways by which he can wriggle out of a conviction, and if convicted, the fine is no deterrent. Our hope lies in the children. Let us at least educate them in our principles. The seed will fall on *some* good ground. There ought to be no lack of publicity. As Mr. Gerish no doubt is aware, full instructions as to advertising such orders are to be found in 57 and 58 Vict. (1894), c. 4. Local authorities should be watched to see that this is carried out.

EDWD. A. MARTIN.

As an interest in the protection of wild birds seems a feature of the Society's aims, would it not be well if they could exercise their influence towards inducing the authorities of Board Schools to allow posters of the Wild Birds Protection Act, as applicable to the county division of each, to be posted up in the Board Schools? The R.S.P.C.A. supplies these, and as school boys are the worst foes to the birds, and horribly cruel in their methods of killing all the nestlings they find, as well as robbing eggs, this would be a means of bringing the law before their notice, so that they could not pretend ignorance of it, and if people of influence could be induced to seeing that it does not remain a dead letter, a good deal might be done to mitigate the wholesale destruction of birds' nests that goes on in the neighbourhood of all towns and villages. Posters applicable to this division of Sussex have been put, at my suggestion, by the authorities in the Board School of this place, and I believe it would be generally acceded to as a sensible plan if suggested through the medium of societies like the Selborne. If the Selborne Society has done, or will take up the matter, I should be pleased to send a donation towards that purpose.

East Grinstead, Sussex. EMILY FOUNTAINE.

Caged-Birds.—I venture to suggest that your contributor, "Lover of Liberty," would do much more for the cause of humanity if, instead of adding to the already too long list of Societies by starting a "league against the custom of keeping captive birds," he (or more probably she) were to join forces with those who are endeavouring to persuade bird keepers to keep their pets under conditions more favourable to their happiness. I grant that

the keeping of birds in small cages is most reprehensible, but the fact that they are so kept is no argument at all against keeping them in aviaries and roomy cages. The keeping of birds, or, as we now call it, aviculture, is largely on the increase in England, and opposition to it is futile; but much can be done by precept and example in teaching the right way to keep our feathered pets.

I believe that bird-catchers have reduced the number of goldfinches, though the decrease is partly due to other causes; but I doubt if there be even one other British species the numbers of which have been seriously affected by the catchers. Generally speaking, so-called "scientific" collectors do the damage, and bird-catchers get the blame.

HORATIO R. FILLMER,
52, *Ship Street, Brighton.* *Hon. Sec. Avicultural Society.*

With a "Lover of Liberty" I should like to see a stop put to the keeping of caged birds; but, as regards the canary, even if people were willing to give up the birds, the difficulty would be how to do so; for to let them die out would mean something very like cruelty in preventing them from pairing, while, if turned loose, they would in general die of starvation and exposure, or be killed by other birds.

It, however, seems to me that a commencement might be made with birds of species that are wild in this country: that it ought not to be impossible to influence public opinion in favour of prohibiting:—(*a*) the capture of wild birds (and the taking of their eggs for hatching); (*b*) the importation of birds of species that are wild in this country—bullfinches, goldfinches, &c.; (*c*) the possession of such birds in confinement after a certain number of years from date of passing the regulation. With these conditions in force a large number of birds now caged might without fear be liberated, and no doubt persons would be found to purchase what dealers have on hand with the object of giving them their freedom.

I believe that birds fully protected would so increase in numbers and would become so fearless that many kinds would give us their company without being confined in cages. People should, however, remember that in and about towns water is not ordinarily procurable by birds. A shallow vessel of water kept in every garden would greatly encourage their presence. A certain amount of feeding is also desirable, particularly in winter, but it appears to me that this may be overdone, and lead to birds neglecting to search for insects.

H. W.

Cuckoo.—I believe that, when a cuckoo deposits her egg in another bird's nest, the intruder, as soon as it is big enough, ousts the rightful nestlings. But early in June an instance to the contrary occurred in my garden. I was sitting under a tree, on the trunk of which I knew there was a sparrow's nest and young birds, as I had watched the old birds going to and fro. There was a sudden clamour and disturbance, and a young cuckoo was jerked out of the nest, and fell, with rather a heavy thud, close to my feet. There had been violent measures before the expulsion, for there was blood upon its beak, and after a few gasps—showing its bright orange mouth and throat—it died in my hand. The nest was too high—it was 8 or 10 feet from the ground—for me to look into it, but it would be interesting to have known how many sparrow beaks it took to serve the ejectment.

Epsom. MARIA GIBERNE.

Peregrines.—One day when driving between here and Thetford, I noticed some half dozen pheasants feeding in a field 60 or 70 yards away. Between me and them was an apology for a hedge in the shape of a few upright dead sticks. Suddenly, at the height of about 100 yards, a peregrine appeared and made towards the pheasants in the open ground, which, on seeing their enemy, scattered with cries of alarm in all directions. The falcon singled out a hen, which made straight towards my carriage. Then there followed a few moments of manœuvring such as one rarely sees, the pheasant taking advantage of any irregularity in the ground, and reaching the fence as her pursuer made a final swoop, and missed her by a foot or two. She then took refuge under my carriage wheels; and the peregrine circling round my head was soon lost to sight.

I shall not easily forget the pheasant's cry of alarm : it was different to anything I have heard before or since. A few weeks after this occurrence I called at the shop of a neighbouring bird-stuffer, who showed me a peregrine he had just set up. Alas, I seemed to feel only too sure it was the same bird that had afforded me the grandest bit of falconry it has ever been my lot to witness.

Market Weston, EDMUND THOS. DAUBENY.
Thetford.

Birds and Bicycles.—It was extremely interesting to note Mr. C. B. Plowright's remarks on this subject, closely agreeing with what I had myself mentioned elsewhere, as to the apparent tameness of birds in the presence of a moving cycle. Sometimes it seems indeed as though one must ride over them, so close do they remain to the machine. One gets quite a shock sometimes, when passing through a group of birds who have settled on the road.

EDWD. A. MARTIN.

White Owl.—I have been informed about a dozen times during the last six weeks that a pure white owl has been seen flying from a plantation on the London road to another one on the Brandon road: I have not been able to ascertain what species of owl it is. My first date for it was on May 28, and the last one on July 13. I am also very pleased to state that owls are increasing round Thetford, as they are now preserved on some estates. Kingfishers are very rare. I have only seen one this year.

Thetford. W. SPARROW.

Wasps and Hornets.—In reply to Mr. Barnard's inquiry respecting the use of these terms (NATURE NOTES, August, pp. 158, 159), I may say that though they are loosely applied both to the burrowing wasps or *Fossores*, and the true wasps, or *Diploptera*, both of which are extensive sections of *Hymenoptera Aculeata*, including many very distinct families, they are more distinctly applicable to the genus *Vespa*, of which we have six species in England, the smaller ones, which are very much alike, being called wasps, and the largest, *Vespa Crabro*, which is nearly twice as large as the other species and somewhat differently marked, being called the hornet. These and their allies belong to the *Diploptera*, and do not store up insects in their nests, but this is the usual habit of the burrowing wasps, in two families of which, *Mutillidæ* and *Thynnidæ*, the females are apterous. The insects belonging to the latter family are very numerous in Australia and South America, and it is doubtless *Thynnidæ* which Mr. Barnard calls "hornets with apterous females." There is much printed information on the *Hymenoptera* of Australia, but it is chiefly scattered in periodicals or general works, and I fear I cannot recommend any work likely to be specially useful to a student taking up Australian *Hymenoptera*.

W. F. KIRBY.

Earwig and Worm.—In answer to your correspondent, who in the July number of NATURE NOTES says he saw a black earwig attack and kill an earthworm, and asks "whether earth-worms form part of an earwig's diet," I should think it very improbable, the earwig being, as a rule, a vegetarian, feeding on the petals and other parts of flowers, and on fruits and leaves, though it sometimes consumes animal *débris* as well. The fact, however, that your correspondent calls it *a black earwig* leads me to believe that the insect in question was not an earwig at all, but one of the larger beetles of the *Staphylinidæ*, or possibly one of their larvæ, as they are highly carnivorous, destroying numbers of slugs, worms, &c., and, on account of their shape and manner of running, may easily be mistaken for earwigs. Neither would the insect have used its antennæ as weapons of offence, a use for which they are quite unsuited. The antennæ of an insect are employed chiefly as instruments of touch, although it is possible that, in some cases at least, the antennæ contain organs both of hearing and of smell.

LINLEY BLATHWAYT, Lieut.-Col., F.L.S.
Eagle House, Batheaston, Bath.

NEWS FROM THE BRANCHES.

Field Club Ramble—Hayes and Keston Common:—

July 9.—Under the leadership of Mr. E. A. Martin, F.G.S., and Mr. A. E. Parnell, the party visited Cæsar's Camp and the picturesque lakes in the neighbourhood, pushing on as far as the famous "Wilberforce Seat," where the great question of Slave Emancipation is said to have been discussed and decided upon by Pitt and Wilberforce. Tea was taken at Keston. Dog-roses, honeysuckle, tormentil, mulleins, nipplewort, ivy-leaved lettuce, yellow bedstraw, hoary ragwort, and buck's-horn plantain, were amongst the many flowers which were gathered. In the lakes the frogs were just taking to the land, many being seen with tails still unabsorbed.

Bath.—*June* 18. A lawn party was given to the members by the President and Miss Skrine. A large number thus availed themselves of the opportunity of seeing the pretty grounds of Claverton. The President gave some interesting memoranda of objects and things found in the woods and streams of Claverton and Warleigh; and a large collection of rare fungi was on view, painted by Mr. Wheeler of Clifton.

June 25.—Rather a stormy day for the excursion to Farleigh Castle, the seat of the Hungerfords, consequently only a small number were present. Some interesting notes on the history of the castle and chapel were read by the Rev. R. Norton Thompson. Many old curiosities are to be seen in the now disused chapel, including the boots of Oliver Cromwell. Some fragments of interesting old frescoes yet remain on the walls.

July 2.—The beautiful park of Combehay was visited under the escort of Col. Bingham Wright. After inspecting the church and rectory grounds the members were invited to tea at the Manor House by Mrs. Smart. Birds of many kinds are found in this park, including the heron.

July 23.—The "druidical" remains of Stonehenge were visited. The members were met at the G.W.R. Station by Mr. Scott and proceeded by train to Wilton. Here a break met them and a lovely drive was taken over the chalk downs to Stonehenge, where a paper was read by Mr. Scott. The drive back was through several villages, some almost entirely thatched. Dutch walls, also thatched, were quite unique. After tea a visit was paid to the beautiful Byzantine Church at Wilton, erected at a cost of about £60,000, after which the members returned home by train.

SELBORNE SOCIETY NOTICES.

Notice of Special General Meeting:—

In regard to the proposal put forward by Mr. R. Marshman Wattson, to increase the amount of the branch contributions payable to the general funds of the Society, notice is hereby given that a Special General Meeting will be held at 20, Hanover Square, W., on Tuesday, October 18, at 6.30 p.m., to consider the proposition. The present rule is that 10 per cent. of the receipts from subscriptions shall be paid over towards the general expenses. The proposal is to increase the contribution to 1s. (or 20 per cent.), for subscriptions of 5s. and upwards.

Field Club Saturday Rambles:—

September 3.—Leave Swanley Junction on arrival of train leaving Holborn Viaduct 2.37; Victoria (L.C. & D.R.) 2.42. Visit the Bee Farm, Farningham, thence through village to Eynsford. Single ticket to Swanley Junction, 1s. 5½d. Guide, Mr. H. W. Brice, *Hon. Sec.*, Kent and Sussex Beekeepers' Association.

September 17.—Leave Bruce Grove Station on arrival of 2.17 train from Liverpool Street, thence viâ Tottenham Church and field paths to "Cherry Tree," Southgate, where tea at about 5.30. Return viâ Winchmore Hill Wood to Winchmore Hill Station (G.N.R.). Guide, Mr. R. Marshman Wattson.

September 24.—Start from Cheam, Surrey, on arrival of train leaving London Bridge (L.B. & S.C.R.) 2.38; West Croydon 3; Victoria 2.14. Walk to Banstead, where tea. After tea walk to Chipstead, and take train at 8.40 for Purley, Croydon, and Charing Cross, where arrive at 9.46. An earlier train leaves Chipstead at 7.39. Guide, Mr. E. A. Martin, F.G.S.

October 1.—Cheshunt "Great House" and Church, viâ Waltham Cross and Theobald's Park. Tea in Banqueting Hall at 5. Liverpool Street 2.15 to Waltham Cross (slip carriage only). Clapton 1s., return 1s. 6d. Guide, Mr. W. B. Gerish.

Council and Committee Meetings:—

The next meetings of the Council will be held on Tuesdays, September 6 and October 4, at 5.30; of the Magazine and Leaflet Committee on September 20 and October 18, at 5.30.

Selborne Society Badges:—

The attention of members is called to the recognised badge of the Society, which was designed by Mr. John Fullwood, and can be had of the Secretary, as follows. Prices: Brooch, 3s.; solitaire, 1s. 9d.; pin, 1s. 6d.; pendant, 1s 6d. They are tastefully designed in pale blue and silver, the outlines being as shown in the accompanying illustration. Councillor's badges have a crimson centre.

They are especially useful as a means of identification between Selbornians at branch meetings, or at country Field Club Rambles.

ANSWERS TO CORRESPONDENTS.

U. M. Langdon.—Your specimen was almost certainly the Rat-tailed Maggot, the larva, that is, of the Drone-fly, *Eristalis tenax*, which breeds in stagnant ditches.

E. Lecky.—Your specimens are not fungi but algæ, viz., *Nostoc*, probably *N. commune*. They are sometimes called, from their sudden appearance after a shower, "falling stars," as when Dryden makes the fairies say—

> "And lest our leap from the sky prove too far,
> We slide on the back of a new falling star,
> And drop from above
> In a jelly of love."

A. P.—Your specimens were tampered with in the post, and arrived too smashed for identification. W. Furneaux' *Butterflies and Moths* (Longmans, 10s. 6d.) is a good introductory book, with coloured plates of the perfect insects: O. S. Wilson's *Larvæ of the British Lepidoptera and their Food-plants* (Lovell Reeve), a more advanced work, but without illustrations of the imagines; and C. G. Barrett's *Lepidoptera of the British Islands* (Lovell Reeve), now appearing in 5s. parts, is a most complete work for the imagines, but only illustrates the larvæ occasionally.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 34, Argyll Mansions, Addison Bridge, London, W.; letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W

Nature Notes:

The Selborne Society's Magazine.

No. 106. OCTOBER, 1898. Vol. IX.

SELBORNIANA.

Exportation of Decrepit Horses.—We are pleased to learn from the September number of *The Animal World* that the President of the Board of Agriculture is preparing an order to prevent the exportation of horses so infirm as to be unable to make the voyage, and to compel the provision of appropriate accommodation for others. When we learn that nearly 20,000 of these "knacker" horses, as they are termed, are exported yearly, the majority from London to Antwerp, we can realise how needful such regulations are.

Act to Make Further Provision for the Prevention of Cruelty to Animals.—On July 18, Lord Herschell introduced in the House of Lords a bill with this title, which was read for the first time. It runs as follows :—

> Any person who, after the passing of this Act, shall ill-treat, abuse, or torture, or cause, or procure, or permit to be ill-treated, abused or tortured, any quadruped, or quadruman, or bird of wild nature, which has been captured or is being preserved on ornamental or other waters, or which is deprived of its liberty, or is tamed, shall be guilty of an offence, and for every such offence shall be liable to the same penalties, and be subject to the same summary jurisdiction as an offender under the provisions of the Scheduled Acts, or any of them in respect of the ill-treatment, abuse or torture of animals as therein defined.

Though we may not all think this measure sufficiently comprehensive, it is one which all Selbornians should support as at least valuable so far as it goes.

African Big Game.—As a striking vindication of the remarks we have recently made on this subject, comes the announcement that, in the interests apparently of sportsmen themselves, an international conference is to be held shortly to consider what steps can be taken to prevent extermination. Elephants, it is stated, have now entirely disappeared from Zululand, and the slaughter

of the last hippopotamus in Natal was recently announced in the papers as a sort of triumph in the world of sport.

An Inadequate Penalty.—Captain George F. Whitmore, of Cambridge, as we learn from the *Yarmouth Mercury*, was recently summoned for shooting four gulls from his yacht, during the close season. The defendant did not trouble to appear in person but, through his solicitor, pleaded ignorance of the extension of the close time. The magistrates, admitting this plea, fined him 2s. 6d. for each bird shot, and costs. This fine of a sovereign, for the wanton destruction of beautiful birds for destruction's sake, is obviously no real punishment to an offender in Captain Whitmore's position.

Murderous Millinery.—We are glad to see *Figaro* speaking out on this question. In its issue for September 1 it denounces "the cruel obstinacy with which fashionable ladies cling to the decoration of their hats with feathers," illustrating its remarks with a cartoon, entitled, "Guilty!" in which a woman much be-feathered is condemned by a whole "Parliament of Birds." The white heron appears as prosecuting counsel; but, rather inappropriately, the ostrich is represented as prison warder.

Portmadoc Light Railway Scheme.—It is satisfactory to learn that the Cyclists' Touring Club have decided to use their powerful organisation in opposing this proposed piece of vandalism.

Chelsea Botanical Garden.—A little while ago this interesting and historical oasis was seriously threatened by the ever-advancing desert of bricks and mortar. It has now, we are glad to learn, been decided that the Society of Apothecaries are to transfer their trust to the London Parochial Charities Trustees, who are to maintain the garden in accordance with Sir Hans Sloane's bequest. Our contemporary, *Science Gossip*, makes the very sensible proposal that the garden should be made the centre of a National School of Botany, pointing out that the capital fund for such a purpose need not be large. A similar proposal was laid before the Royal Botanic Society a short time ago by Mr. Martindale, and such a scheme seems to promise a successful enterprise to any band of enthusiasts who will take it up.

Golder's Hill.—We are pleased to be able to publish in Nature Notes the two annexed views of this charming additional open space on the Northern Heights of London. All the money requisite for its redemption has not yet been secured, so our readers have still an opportunity of contributing further to this useful object.

GOLDER'S HILL. THE UPPER LAKE.
[By kind permission of the proprietors of "London."

GOLDER'S HILL—IN THE GROUNDS.
[By kind permission of the proprietors of "London."

Glover's Island, Richmond.—Just as we go to press we see with pleasure that the owner of this willow-grown mud-lump in the Thames has failed in his attempt to bluff the public-spirited out of £4,000. A quarter of that sum is the outside price which the Richmond ratepayers ought to give to secure this tiny eyot.

Swiney Lectures on Geology.—The course of twelve lectures for this year, admission to which is free, will be delivered by the eminent palæontologist, Dr. Traquair, in the lecture theatre of the South Kensington Museum, on Mondays, Wednesdays, and Fridays, at 5 p.m., commencing Monday, October 3, the subject being "The Palæontology of Great Britain."

Assisting the Editor.—The Editor will be much obliged by any cuttings from newspapers bearing on the objects of the Society. They should be accompanied by the name and date of the paper from which they are taken. The Editor is also anxious to procure copies of Nos. 4 and 5 of vol. i. of the *Selbornian Magazine* (April and May, 1888), which he requires to complete his reference set of the Society's publications.

Flowers of the Field.—Her Royal Highness Princess Alice of Albany has accepted the dedication of the new edition of Johns' "Flowers of the Field," by the Editor of Nature Notes, which is about to be published by the Society for Promoting Christian Knowledge.

AN AUTUMN DAY AT SELBORNE.

I HAVE been several times to Selborne, in early and late spring, in summer and in the hopping time; but never until last year to see it in real autumn—to me the most beautiful and enjoyable of all the seasons of the year. This may be because I am getting into the autumn of my pilgrimage on God's beautiful earth. I certainly enjoy the beauty that autumn brings with it, more and more as the years roll round. No one will deny that the autumn of 1897 was a record one, for the gradual tinting of the leaves received no sudden check by frost or inclement weather; everything tended to the ripening and lengthening of its season of beauty further into the winter than is generally the case. From the time the leaves begin to change their green colours for the various tints of autumn, up to the time they fall, I look upon as their ripening time. We are apt to associate this transition with decay. I look upon it in the same way as the colouring of fruit. If we take, for example, the quince, I have been

watching the leaves and the fruit mellowing and yellowing down together, and I think what is true of one is true of the other. This view seems to me more in accordance with Nature. They have both a similar point of attachment to the branch, which gradually becomes weakened and eventually gives way when maturity is complete: they then fall and decay.

It is marvellous, when we really think of it, in a climate like ours, how wisely Nature has regulated the light and shade for the different seasons. Most of our trees and shrubs are deciduous, that is, they lose their leaves annually at the approach of the long, dark and dreary winter, when every ray of light is valuable. Were they all, or in greater part, evergreen, we should hardly grope our way about. Take any individual tree, or a wood, such as the Selborne Hanger. The shade is welcome through our long, bright days, although we can barely see the sky through its roof of foliage. How gloomy this would be in winter. This roof is removed. The trees become divested of their leaves. The sky shows itself and the light penetrates through the airy and graceful skeletons with little diminution of its power. We can hardly conceive what our winters would be in the country were the foliage perennial. We have always the happy consolation of knowing that as surely as the leaves go in autumn, they will come again in spring, although in a different dress, which is more or less being prepared for them in the interval.

On October 15, in early morning, I reached Selborne by way of Alton. I always like a country ramble before the hedge trimming begins, the roads and lanes are then so charming. The beauty of the Devonshire lanes is proverbial, but, to me, those of Hampshire, and especially Surrey, are more enjoyable; the hedges are not so uniformly parallel and restricted as in Devon. I like the varying strips of greensward by the road-side, which seem as though the hedges had overflown with their wealth of rustic beauty and had planted here and there brambles and clumps of their own happy mixtures, whilst still giving us room for blackberrying. The old lanes about Selborne are not remarkable for their width, but rather for the height of their charming banks, which are indeed one of the features of the place. On my arrival at Norton Farm, inclination would have taken me down the old lane by a more circuitous route to the village, and once the only way; but in these cycling times such a course would not have been practicable; so for the last mile the new road, with its trimly kept quick hedges, had to be taken. Here on the left was seen, on the occasion of the Gilbert White centenary in June, 1893, when so many flocked to Selborne, the old time picture of four sturdy, brown, Sussex oxen yoked together and ploughing as carefully as, if a little more slowly than, the more familiar horses of the present day.

At some distance before approaching the village the Hanger comes in view. I was anxious to get the first sight of it in its

autumn dress, which I expected to find lovely and just at its best, an expectation in which I was not disappointed.

On entering Selborne village I was much struck with a most brilliantly coloured plant of the small-leaved Virginian creeper (*Ampelopsis tricuspidata*): I had noticed many on my way, but none I think so intense as this. It covered the gable end of an old cottage belonging to the Wakes. This charming climber is replacing to a great extent the larger-leaved Virginian creeper (*Ampelopsis hederacea*). It retains its foliage longer and clings without help. At the time of my visit it was at the height of its beauty and promised to last into November, while the larger-leaved species was in most cases quite over.

I had now reached the Plestor, where much of the interest of Selborne is centred. On one side is seen the Wakes, Gilbert White's old home, which has been so often described that I need only mention it; and opposite is the vicarage, the church and the churchyard, with its grand old yew. On the rustic wooden seat, encircling its rugged and fissured old stem of twenty-five feet circumference, many a visitor has sat in reverie. More interesting still, in a quiet and secluded part of the churchyard is found the time-stained, unobtrusive little head and foot stone of the great naturalist and good man who has made this village so famous. I was pleased to see some young plants of the small-leaved Virginian creeper planted on the heavy grey walls of the old church, suggested, perhaps, by the fine plant I have mentioned. Not far from the old yew stands a magnificent horse-chestnut, forming a striking contrast to its sombre neighbour. The foliage had tinted most beautifully to the fine, bright, crinkled, yellowish bronze that this handsome tree can take when at its best. The place, in the middle of the Plestor, formerly occupied by the venerable but unfortunate old oak, is now occupied by a sycamore, which is not in robust, or even in promising condition and will probably never make a really good specimen. To my mind, the sycamore is not the best tree to have planted in so memorable a place.

I am now full face with the Hanger in a fine October sun. The beautiful neighbourhood of my own home, where the Thames valley runs between the chalky beech-covered hills that flank its sides, is celebrated for its autumn colouring, so that the tints of Selborne were no novelty to me. Yet I was anxious to see if they varied in intensity or otherwise. They were equally beautiful, and it is no surprise to me that Gilbert White considered the beech "the most lovely of all forest trees, whether we consider its smooth rind or bark, its glossy foliage or graceful pendulous boughs." In another place he says: "Young beeches never cast their leaves till spring, till the new leaves sprout and push them off; in the autumn, beechen leaves turn of a deep chestnut colour. Tall beeches cast their leaves about the end of October." The peculiarity of the beech under certain conditions—which is shared by the hornbeam and

oak in perhaps a lesser degree—of retaining its dead leaves through the winter is singular. I have studied this matter for some years and should be pleased at some other time to give my views upon it. Gilpin, a celebrated writer and lover of trees, speaks very disparagingly of the beech, and does not give it at all its proper rank, either as a picturesque tree or for its utility. Although Gilpin was contemporary with White and vicar of Boldre, in the New Forest, for many years, in the same county as Selborne, they do not seem to have known each other. Gilpin died in 1804, aged eighty, and was buried in Boldre churchyard. His grave is marked by a much more pretentious monument than White's, and is overhung by a fine old specimen of the English maple.

A little more than half-way down the village a footpath to the right leads to the bottom of the Zigzag walk, by which it is easy to reach the top of the Hanger and the sheepdown. At the time of my visit this remarkable walk was being carefully remade, without altering materially its old form. Originally it was probably cut out of the natural soil, not bad in dry weather, but when damp or wet the surface of marly chalk was very slippery and treacherous, and I am sure many have shown the nature of the soil on their hands and knees on leaving it. The work was being done in a very substantial and workmanlike way, and when the dwarf scrubby underwood grows up here and there again, and the trees close in a little, with the newness worn off, it will be a great and lasting improvement. To those who do not know the construction of this extraordinary way of getting up a steep hill with the least amount of exertion, I may say it is a series of gradually ascending short diagonal paths, each five to six yards long, first to the left, then to the right. This is repeated until an elevation of 300 feet is reached with ease and comfort. A good water-channel has been made on each side—a most important point in its construction. The gravel was being carted and tipped at the top of these channels, and the descent being so steep, it was easily shovelled down them until it reached the end of each little walk in its turn, when it could easily be put on, a novel, but evidently the easiest, way to do the work.

About twenty yards from the Zigzag, parallel with it, and not perhaps generally noticed, is a hollow narrow shoot, or disused path, clear of tree-stems and thick with dead leaves. I should not have observed it, had not a boy been highly amusing himself tobogganing down on two boards belonging to the works on the Zigzag. The boards always reached the bottom with great velocity, but the boy was sometimes flung off on the way. I walked up this disused track in a straight line with the greatest difficulty, and should not care to repeat the experiment. I found it, roughly speaking, about 150 yards. I then stepped the Zigzag walk, which was a little over 450, making it rather more than three times the actual distance. I think this old shoot must be

one of Gilbert White's *Strawberry sliders* down the Hanger. He says under the heading of "Seeds Lying Dormant," . . . "When old beech trees are cleared away, the naked ground in a year or two becomes covered with strawberry plants, the seed of which must have lain in the ground for an age at least. One of the sliders or trenches down the middle of the Hanger, close covered over with lofty beeches near a century old, is still called *Strawberry slider*, though no strawberries have grown there in the memory of man. That sort of fruit did once, no doubt, abound there, and will again when the obstruction is removed."

On the top of the Zigzag is a huge boulder, called the wishing stone. Here the sheepdown commences, at this end with a brow of open turf, from which is seen one of the most charming, varied, extensive and peaceful views in the south of England, much enhanced just now by the lovely tints of the autumn leafage. The view was naturally interesting to me, as it includes in its area the home of my boyhood, as the bird flies but fifteen or twenty miles away. I could see the very hills and woods that surround it. It is peculiar how the little raised anthills on the sheepdown have become covered with wild thyme, rock rose and bird's-foot trefoil, the latter becoming very dense and tufty, giving room for very little grass. The downs are but thinly clad with trees, but made up of thicket, open spaces, clumps and patches of bramble and bracken, hips and haws, scrubby beech and maple, and the usual accompaniments that make up the charming medley that Nature only can plant. Here were blackberries in abundance, hundredweights going to waste, although I was told that people came with baskets for miles round to get them. I could not resist a feast of the Selborne blackberries. I was much struck with the beautiful colours of some of the bramble leaves. We call the bramble a sub-evergreen, yet while much of the foliage keeps green through the winter, many leaves change in autumn and assume most lovely tints, seldom two alike; and even the leaflets on the same leaf often vary in colour, every shade occurring from golden to deep crimson. I had never noticed the beauty of bramble leaves so much before, but thanks to Selborne, I have done so many times and in many places since, with much pleasure and interest.

I returned from the west end of the sheepdown by the shady walk that runs diagonally right through the Hanger and is called the Bosco. This brought me back again to the stile at the bottom of the Zigzag. Owing to the dense shade of the Hanger there is little undergrowth. This is always the case with a beech wood; since besides its shade, the beech is a surface-rooting tree, exhausting the soil where it abounds. Here and there a drawn holly, a little rambling privet, the more frequent ivy and a few patches of the wood melic grass was about all that could exist.

On reaching the street I just went for a peep at the Wellhead. I knew that the spring had been tapped somewhere behind for a water-supply to the village, but I did not notice any perceptible difference in the quantity coming from the Wellhead.

I now hurriedly retraced my steps to the Plestor, passed through the churchyard or Litton, down the Lith, and on by the path that leads to the Priory farm. Here stood the old Priory, founded in 1232, dissolved in 1486, after a chequered career of 254 years. I always take this walk whenever I go to Selborne, from the churchyard down by one side of the brook to the Priory farm, and back by the other side and out into the village by the rough lane. A more lovely walk can hardly be imagined —a quiet secluded valley with sides clothed with wood and thicket and a brook running among pastures between. It is said this spot at Selborne was chosen for the Priory because "the situation was retired, with a stream running through it, sequestered from the world, among woods and meadows, and so far proper for a religious house." No one who has been to Selborne can deny the truth of this. I was much pleased with the unusual but beautiful autumn tints of some of the maples on both sides of this valley: instead of the clear yellow they generally take, several had assumed a warm bronzy tint, approaching the beech. I had seen them vary, but never before to the same extent. The genus *Acer* (maples) with its numerous species, gives us more variety and beauty in its autumn tints than any other. Selborne has long been celebrated for its specimens of wych elm; and there are also some good examples of the common elm. To see this tree in its most perfect autumn beauty one must watch the morning sun as it lifts the mist the surface of the trees, leaving them like clouds of brightest gold.

The time had now all too quickly come to say good-bye to this fascinating spot. In no parish that I have visited is there more variety in hill and dale, wood, thicket, and open downs, cultivated land and pasture, lanes, footpaths, banks and hedges, brooks, springs, bog and heath, or in the soil, fauna and flora. I know of no other parish where there is the same freedom and convenience in rambling about as at Selborne.

On my way I passed by Blackmoor, an outlying district of Selborne, with its beautiful church and churchyard, the gift of one of England's most learned and kindest-hearted noblemen. He selected this half-barren and somewhat benighted spot to build his house, but before building his own home he built the church. The influence for good resulting from his munificence has been incalculable. Many have had reason to bless the name of the late Lord Selborne. His church will have a longer and a more glorious record than the old Priory, because it has been built on a better foundation.

GEO. STANTON.

FORESTRY.

PRACTICAL forestry has been defined by Mr. Mitchie as signifying the growing of the greatest quantity of the most valuable wood or timber upon the smallest piece of ground in the shortest period of time. This may suffice very well for forestry as practised in Scotland; but when we consider the manner in which the science is applied in countries nearer the sun, some addition becomes necessary. The full practice of forestry then further implies the maintenance in a given country of the proportion of woodland suitable to that country, that there may be the best climate obtainable in that country for the maintenance and reproduction of animal and plant life conformably with the wants and enjoyments of man. It may be added that forestry, so carried out, amongst other benefits, regulates the rainfall, prevents to a large degree violent storms and drought, and diminishes disaster and discomfort by floods and drifting sand.

The *science* of forestry, however, has only been known for some two hundred years, yet its great importance is seen when we consider what takes place in every country as it becomes civilised.

Whilst in barbarous times men are content to live upon the wild fruits of the forests and plains, the spoils of the chase, the food to be obtained by trapping and fishing, and what can be wrested from neighbouring tribes or travellers by force of arms; as soon as they gain ideas of civilisation they clear a space amidst the trees of the forest to build a collection of dwellings and to grow corn and other food and provender in greater quantity than can be conveniently gathered in the wild state. Wood, moreover, is required for firing, to build houses, boats, and for many other purposes; so it comes to pass that the area around the settlement denuded of trees becomes greater and greater.

Where a civilised invading force occupies a land covered with primeval forest, then, of course, the cutting down of trees goes on at a much accelerated pace.

One result of civilisation generally, then, is the gradual but steadily increasing disappearance of trees, a few remaining, and man planting some fruit and other trees that he sees will be of use to him: the forests are destroyed with most disastrous results, involving the ruin of climate favourable to life, and so the impoverishment and eventual downfall of once powerful nations.

Such has been, and is still, in too many cases, the usual course of events. Most, however, of the nations of Europe have learnt the value of forestry, and some of them practise it so thoroughly that a proper proportion of their land is kept covered by trees; so that there are equable seasons, and agricul-

tural operations can be performed with the greatest possible success.

Now let me take the case of a country completely, or almost completely, denuded of trees, say a *hilly* portion of the interior of the Sahara desert—for that region is by no means a flat expanse of sand, as we were told not so many years ago. I will suppose that a large body of cloud, containing sufficient moisture to produce abundant rain in England, approaches this piece of almost rainless desert; the heat radiated from the surface of this hot locality, and the heated air rising from it, will carry the cloud upwards into attenuated atmosphere and dissipate it into such fine vapour that there will be no rainfall; and this is what usually happens during the greater part of the year.

Next let it be supposed that the cloud is driven towards a hilly desert region so situated, say near the sea, that rain falls on it less rarely than in the former case, for the land is not so much heated as the more central desert, and when the clouds are very heavily charged they will resist the smaller upward pressure of less heated air. The rain falls violently on the hills, a little of it soaks in, to be evaporated directly the cloud is gone, by the sun's rays, whilst the greater part runs from the sides of the hills as from the roof of a house, fills the hitherto dry water courses with raging torrents, and floods the valleys and plains in its impetuous rush towards the sea.

Lastly, I will take the case where the cloud comes to a land with the hillsides covered with their natural clothing of trees, but where, in the lower parts of the valleys, and in the plains, the forest has been cleared away and the greater part is under cultivation: there are plantations here and there where the ground is unsuitable for grass or tillage; and orchards of fruit trees and pleasant gardens abound. Such a country has running streams and rivers, and though the cultivated ground has been artificially drained by man, there is sufficient moisture everywhere for the maintenance of life in trees and plants: water is retained in the forests, and from them, from the rivers, ponds and streams, as well as from every square foot of ground, arises continually more or less watery vapour. The approaching cloud meets this ascending vapour, it meets the trees on the hills, it encounters the cool sides of the hills—there is a downfall of rain. Then the water, instead of rushing violently down the hills, is to a large extent retained upon them amidst the trees, their roots, and the undergrowth, and the trees protecting the earth from the rays of the sun, the soil acts as a sponge, and the water remaining in the woods on the hills, is given off gradually to the streams and rivers. Here is a perfect system, here is Nature modified to suit the wants of man.

I have read many times that trees *bring* rain, but how they do so is but imperfectly understood. However that may be, we have here a sufficient explanation for our present purpose. Trees seem to be made to take from clouds their moisture. If we watch

clouds drifting through trees we notice, when they have passed, that the trees are wet and dripping: if the clouds are above the trees, other conditions being favourable, the vapour that constantly rises from every wood will (by the law of cohesion) detain them and uniting with them the clouds become overcharged and rain descends. Perhaps it cannot be truly said that trees bring rain; but they, and the moisture that surrounds them and without which they do not exist, arrest the watery vapour in the atmosphere so as to cause rain to fall. Besides, by the law of gravitation, the moist vapour that lies in and hovers above the forest, must attract passing clouds floating in the surrounding atmosphere, and trees themselves must do the same to some extent.

Living a mile from the sea, as I do now, and a few miles from the New Forest, clouds coming from the sea frequently drift through my garden, just wetting the trees without any rain falling, but on their reaching the forest there will be a downpour.

Forests, it must not be forgotten, are of the greatest service to man in making leaf-mould, which when washed down to the lower levels produces fertile lands, as in the case of river deltas, or enriches a country as the waters of the Nile do, when they overflow and deposit a rich mud formed from leaves, mosses, decayed wood and such like. The wash down from bare hills is not only useless but destructive when it covers up land under cultivation.

From what has been said it must be evident that if, under the impulse of civilisation, man entirely destroys the forest, except in special situations, he so ruins the climate and altogether causes such mischief that he destroys agriculture and makes the land unfit for human habitation. Yet this is exactly what has happened in a greater or less degree throughout nearly the whole world.

Let us cast our eyes along those countries that are seen on the map surrounding the Mediterranean Sea, that central water that ever must be the common highway of civilised mankind. We commence with Spain, a country to which I particularly drew attention in my former paper (see NATURE NOTES for August, 1896), whose climate has been destroyed by the drought ensuing from the cutting down of the forests, and whose prosperity has steadily declined with the consequent failure of agriculture. The centre of the peninsula is almost treeless, alternate hot and cold blasts sweep unchecked over it, the fat of the land has evaporated and is not reproduced, the earth is dust. It may be fairly said that had Spain expended in the restoration of her forests the sums she has squandered during the last fifty years in the island of Cuba, she would already be seeing much improved days. Yet Spain is not the most backward country in Europe in the matter of forestry, that post of distinction belongs to a people that will be dealt with last. The Spanish have an excellent school of forestry at San Lorenzo del Escurial, near Madrid, and were sufficient funds

forthcoming, no doubt a vast amount of good practical work would be done.

Next comes France, at this day an enlightened country as regards forestry, and whose famous enterprise of planting with pines a desolate and unhealthy district of one and a half million acres in extent on the "Landes" not far from Bordeaux, with the result that after thirty years and thenceforth, it maintains in prosperity a population of one and a half million people instead of a few thousand paupers as formerly, is pointed out to all students of forestry as a record performance. Gaul, we read, was in Cæsar's days covered with dark forests, broken here and there by cultivated clearings, but later the slopes of Provence and Rousillon were denuded of wood and stood bare, as did Greece, this last-named country, be it observed, having been *civilised* at an earlier epoch. The great French school of forestry at Nancy is well known, and there are many other schools throughout the country teaching the same science. The French, however, are not always consistent, and Sir John Lubbock tells us in *The Beauties of Nature*, how two departments—the Hautes- and Basses-Alps—are being ruined by the destruction of forests.

The next country is Italy, the centre of that once mighty empire that held the Mediterranean Sea as a Roman lake. We ought to expect great things here, and great things we shall find, for it was the neglect of forestry that caused the downfall of Rome from her position as the mistress of the world; and it is its continued neglect that keeps Italy poor. The real strength and backbone of a nation consists in its having a large and healthy rural population: from such people alone can great and powerful armies be raised. When the Romans gradually destroyed their forests, as every other power had done before them to their own destruction, rain became scanty, streams dried up, and the climate became hot and sultry, agriculture declined, work in the fields diminished, the country people became poor, idle, and ill-fed, and steadily deteriorated in physique, they decreased in numbers, many of them crowded into the towns, and the manly virtues disappeared. Then were there no strong right arms at home to defend the heart of the empire, and Rome had to rely on foreign and colonial mercenaries, and the help of doubtful allies, with what result all students of history know well. I could quote much to show to what a vast extent Roman forests were cut down, but space will allow but one line from Marny, the French writer, "The great plain of the Po is completely divested of forests, there is not a single conifera in it." The floods in Italy, that were in November, 1896, so destructive to life and property, were the result of the trees having been removed from the sides of the mountains. But modern Italians are not all ignorant of the cause of such disasters, for they have a forest school at Vallombrosa.

GILES A. DAUBENY.

(*To be continued.*)

REVIEWS AND EXCHANGES.

Weather Lore: a collection of Proverbs, Sayings and Rules concerning the Weather, compiled and arranged by Richard Inwards, F.R.A.S., Past President of the Royal Meteorological Society. Third edition, revised and augmented. Elliot Stock. Demy 8vo, pp. xii. and 233. Price 7s. 6d.

It is not surprising that Mr. Inwards' compilation has reached a third edition. It is a thoroughly business-like piece of work, some 3,000 extracts sensibly classified and well indexed, and the whole presented in a well printed and strongly bound volume at a moderate price. It affords us a perfect mine of interesting, if somewhat disjointed reading. Here, for example, are some of the extracts relating to October:—

"Dry your barley in October,
Or you'll always be sober.

"Because if this is not done there will be no malt.—SWAINSON.

"*Wind.*—A good October and a good blast,
To blow the hog acorn and mast.

"*Fine.*—There are always nineteen (some say twenty-one) fine days in October.—KENT.

"*Rain.*—Much rain in October, much wind in December.

"*Fogs.*—For every fog in October a snow in the winter, heavy or light according as the fog is heavy or light.

"*Leaves.*—If in the fall of the leaves in October many of them wither on the boughs and hang there, it betokens a frosty winter and much snow.

"*October and November.*—October and November cold indicate that the following January and February will be mild and dry.—C. L. PRINCE.

"*October and Winter.*—When birds and badgers are fat in October, expect a cold winter.—UNITED STATES."

It should at once be stated that the author does not himself endorse the many and often contradictory saws that he has collected. Every naturalist must recognise how many of the varying phenomena of the organic world are dependent upon meteorological conditions, and every devout follower of Gilbert White will take an interest in the weather. For some reasons we should have preferred more precise references than those given by Mr. Inwards, and in one or two places he might have given rather more information, *e.g.*, by adding the French Revolutionary names of the months to Sydney Smith's satire on p. 7 and giving the passage—it amounts only to some five-and-twenty lines—from "A Midsummer Night's Dream," referred to on p. 9, which, by the way, is in Scene 1 and not, as stated, in Scene 2. The scientific names should have been added to the useful lists of plants with their dates of flowering and hours of opening given on pp. 52 and 53, and several mis-spellings occur in those which are given, *e.g.*, "*Chinodoxa*" for "*Chionodoxa*" (p. 52), "*Trajopogou*" for "*Tragopogon*" (p. 189), and "bankinia" for "banhinia" (p. 191). The book is illustrated with a folding frontispiece of the ten chief types of cloud, from photographs by Colonel H. M. Saunders, giving their altitude in feet, kilometres and miles and as compared to the chief mountains.

Flora of the County Donegal, or list of the flowering plants and ferns with their localities and distribution. By Henry Chichester Hart, M.A., F.L.S., M.R.I.A. Dublin: Sealy, Bryers and Walker; London: David Nutt. 8vo, pp. xxiv. and 392. Price 7s. 6d.

We congratulate Mr. Hart on the completion of what has obviously been to him a labour of love extending over many years. County floras are rare in Ireland and, judging from Mr. Hart's account of his own almost single-handed labours, botanists would seem to be still rarer in Co. Donegal; so that, but for the author's zeal, we could hardly have expected such a work as the present. With its subject matter we are not able to deal from personal knowledge. The author records 737 species as native to the county, adopting the curious antiquated custom of including, not only ferns and their allies, but also the Characeæ. The records themselves occupy only 188 pages, and there is nothing to complain

of in them as to over-minuteness of localisation, from the Selbornian point of view. In critical genera, such as *Rubus*, *Carex*, *Potamogeton* and *Hieracium*, the work gains much from the assistance of the late Professor Babington, Messrs. J. G. Baker, Arthur Bennett and F. J. Hanbury. A good map and excellent accounts of the topography and geology of the county and of the abnormal flowering seasons, and distribution geographically and in altitude of the flora are prefixed. This introduction occupies 108 pages, and might well have been in smaller type, whilst the body of the Flora is, in our opinion, printed smaller than it should be. We also cannot help feeling some regret that Mr. Hart should have felt it necessary to adopt merely artificial divisions for the large county which came under his purview, based mainly upon the baronies, instead of some dependent upon natural features. An account of the meteorology of the county placed after the Flora and extending to 68 pages of large type, however valuable in itself, seems to us quite out of proportion; and the plant-names and plant-lore, relegated to an Appendix, would, so far as it refers to Co. Donegal, have been better incorporated in the body of the work. The nomenclature adopted is in the main that of the *Cybela Hibernica* of 1866, which is now largely obsolete; and we have noticed a considerable number of misprints in addition to those in the "Errata." County floras are generally many years before reaching a second edition, so that we the more regret these blemishes in what is, in spite of them, an indispensable companion to any of the yearly increasing number of tourists in the north-west of Ireland who take an interest in plants.

Insect Lives as told by themselves. By Edward Simpson. With twenty-three illustrations. The Religious Tract Society. 8vo, pp. 128. Price 1s. 6d.

THIS pretty little book contains nineteen autobiographies of insects, including representatives of all the thirteen chief orders of the class. We are not quite sure that this autobiographical method adds appreciably to the attractiveness of science for readers of any class or age; but, with this qualification, Mr. Simpson seems to have done his work very well indeed. There is a brief introduction on insects in general, with an excellent table of the orders and their characters. As we have said, the types chosen are thoroughly representative: each species named has its scientific name appended, these names being both accurate and correctly spelt—which is too often not the case in books of this class; and the idea of giving the whole life-history is an excellent one. We cannot discover from the story of the caddis-worm the exact answer to a query we recently received (p. 117); but had another of our correspondents had this book by him he would have had little difficulty in identifying the rat-tailed maggot. The illustrations are mostly old friends and one or two of them, such as that of cuckoo-spit, are not very good; but as a whole the little book seems to us an excellent first book for young readers.

Angling Days and an Angler's Books. By Jonathan Dale (I. E. Page). Cheaper edition. Elliot Stock. 8vo, pp. 160, with six illustrations from photographs.

THIS little volume is a reprint of some eight-and-twenty light and attractive sketches which originally appeared in *The Angler*. It is perhaps sufficient to say of them that their perusal made us long more than once to lay aside pens and papers, get a rod and go fishing,—with Jonathan Dale, or his book, for a companion.

Voices of the Day; or, Thoughts on the Message of God in Nature. By C. S. Wardle. Elliot Stock, 1897. 8vo, pp. 140.

THIS is a volume of pleasantly written sermons, evincing perhaps rather more of the enthusiasm for Nature of the artist or the poet than of the knowledge of the naturalist. How else can the following passage be explained? "From the algæ which the small zoophytes and molluscs feed upon, to the 'leviathians' that inhabit the deep, naturalists of the present day know of 11,000 species of salt-water fishes." We had marked for quotation an excellently worded outburst of indignation against cruelty to animals (p. 97); but, as we cannot give both, prefer to transcribe this passage on education (p. 23):—"We need more education out of doors. At least half the lesson-time our children now spend indoors ought to be spent in studying the flowers as they grow in the fields, the trees as

they flourish in the woods, the rivers as they flow by their banks, and the hills and mountains upon their sides. The study of a flower, a tree, a grain of corn, an insect, or a fish, in the light of the Creator's benevolence, is of more real value, as a foundation of knowledge, than all other teaching in the world. We are outdoor animals. To enjoy perfect health we must spend a great proportion of our time out of doors. All the medical skill in the world cannot restore the injury done to the bodies of those who are deprived of their natural food in God's pure air. And if this is true of our bodily health, it is also true of our spiritual health."

Knowledge for September is an exceptionally interesting number. Besides continuations of the "Karkinokosm," by the Rev. T. R. R. Stebbing, of Mr. J. R. Jackson's "Economic Botany," Mr. Enock's "Insect Miners," and Mr. Vaughan Jennings' "Botanical Studies,"—that of this month being the fern *Asplenium Trichomanes*—there is a paper interesting to all students of English literature, on "The Astronomy of the 'Canterbury Tales,'" by Mr. E. W. Maunder, and another on "Repetition and Evolution in Bird-Song," by Mr. C. A. Witchell, which bears directly upon topics recently discussed in NATURE NOTES.

Science Gossip for September is true to its title in having many excellent notes, such as those on "How the Hydra stings," "The Study of Lichen Structures," and "Geology at the Crystal Palace." There is also a sketch, with portrait, of the career of Professor Lankester, the newly-appointed Director of the British Museum of Natural History.

Humanity for September contains three powerful protests, one, a continuation, by Mr. Joseph Collinson, on "The Slaughter of the Fur Seal," the second, not concluded, on "Docking," and the third on "The Cramming of Strasburg Geese."

Our Animal Friends for September introduces us to the League of American Sportsmen, which we join with our transatlantic contemporary in cordially welcoming. Mr. G. O. Shields, the President of the League, finds, after careful inquiry, that in thirty States of the Union the birds have, during the last fifteen years, been reduced in number by an average of 46 per cent.! Another article on "The Balance of Nature," taken mainly from the *Scientific American*, gives the following startling account of the economic result of an accidental interference with that balance on the part of a man of science. Some years ago a few gypsy moths imported by an entomologist living near Boston escaped. "So injurious have they been to vegetation that the State, after spending 450,000 dols. in the last four years in a vain attempt to exterminate their descendants, now expects that at least 1,575,000 dols. will be required, and that the annual appropriation for five years to come will be at least 200,000 dols."

The Animal World for September is largely occupied by the account of the Annual Meeting of the R.S.P.C.A., at which a very satisfactory report of work done was presented.

Received.—*The American Monthly Microscopical Journal* for August.—*The Naturalist* for September.

NATURAL HISTORY NOTES AND QUERIES.

Rabbits and Belladonna.—I have lately seen by a newspaper report that a family has been poisoned by eating wild rabbits which had partaken of belladonna. It mentioned in the report that rabbits can partake of belladonna without danger to themselves, but that it is fatal for a human being to eat the said rabbits. Can you kindly tell me of any means by which a cook can discover the poison?

9, *Nottingham Place, W.* FANNY E. PARTRIDGE.

Singing Mice (p. 176).—Many years ago a correspondence on the phenomena of musical mice ran through the pages of Hardwicke's *Science Gossip*, and I believe that the conclusion arrived at was that the songster was suffering from some affection of the bronchial tubes rather than from a diseased or parasite-infested liver. I have only met with one specimen of a singing

mouse, and in that instance the "song" strongly reminded me of the soft twittering of young birds, and also struck me as being of a ventriloquial character.
Fyfield, Abingdon. W. H. WARNER.

Yellow-Necked Mouse (*Mus flavicollis*).—Can any reader or contributor of NATURE NOTES give me a little information as to the occurrence or habits of this species of mouse, other that what is given in Mr. Lydekker's "British Mammals." It is there said to be exceedingly abundant in Herefordshire, but no other locality is mentioned.
Fyfield, Abingdon. W. H. WARNER.

Rats carrying Eggs.—Some fifteen years ago I kept tame rats, and was always amused at their antics when I gave them eggs as food. On these occasions, in fine weather, I would permit them to play with them on the lawn; they showed marked dexterity in trundling the eggs, guiding them as carefully as a brewer's man would a barrel of beer, and with great rapidity, using the nose and the two forepaws. On becoming tired of the game they would sit on their hind quarters and with teeth and nails bore a hole sufficiently large for the insertion of the nose, and in this way suck the egg perfectly dry. I therefore see no reason why, during the dark hours of night, several rats could not clear a hen's nest of all the eggs and take them a considerable distance. I venture to think, in the case mentioned by one of your contributors, that the eggs must have been in the nest of a fowl which had laid "away from home"; but even should that not have been the case, a rat is perfectly able to stand on its hind legs and hold an egg in the same manner as a squirrel holds a nut; the eggs could be handed from the one in the nest to the other below. I, however, place more faith in the suggestion of the outside ground nest.

The great sagacity of rats has long been known; the late Frank Buckland gave it as his opinion, that among the smaller order of mammals the rat in intelligence was much ahead of all his *confrères*. W. H. McG.

Perhaps Mr. E. T. Daubeny would like to know what has been said by Mr. Ike Matthews, professional ratcatcher of Manchester, on this subject, in a most naïve and entertaining little book recently published ("The Revelations of a Ratcatcher"): "I have read of many ways in which rats take eggs, but in my quarter of a century's experience of ratting I never saw rats take eggs save in one way, and that is dragging or rolling them along the floor with their front paws until they get them to the mouth of the hole. I remember one place where I was ferreting. There was an old cellar, the door of which at the top of the steps had to my knowledge been nailed up two or three years. Out of the hen-house the rats had eaten a hole at each side of the cellar door at the bottom. One day we burst open the door, went into the cellar (where it was impossible for a hen to get whilst the door was closed), and beneath the bottom steps we caught two rats. On lifting the flag at the bottom of the steps we found fifteen whole eggs, some good and some bad, all of which I am quite satisfied the rats had carried down those nine steps." Mr. Matthews shows himself a careful observer, and he never ventures into the tempting realm of conjecture, so attempts no explanation of a feat he did not actually witness. E. D. C.
20, *Pembroke Road, Kensington, W.*

Rats, Water, and Moorhens.—For many years I have tried to induce moorfowl (moorhens) to take up their abode at a stagnant pool of water in my fields. At last I am pleased to find it occupied by these interesting shy birds. But I find it also visited or infested by common rats from a corn field, which, I see by their runs across a meadow, is somewhere about 200 yards from the nearest water during this exceedingly dry time, the brooks being dried up. I caught one in the run, and mean to catch other travellers along this route. It is wonderful how exact rats are in traversing the exact run, when once it is laid down, however winding the path. J. HIAM.
Astwood Bank.

Caged Birds.—I quite agree in the remarks of Mr. Horatio R. Filmer on pages 176-7. I have for the past fifty years scarcely been without a caged bird for a pet, and hope to have one or two as long as I live. At the same time I love to see certain birds enjoying themselves as free as the air they breathe. There is

one bird that I have not the slightest hesitation in recommending eaging and taming and making into a pet, instead of shooting, which is its usual fate, and that is the bullfinch. They do a vast amount of damage to fruit trees in taking fruit bloom-buds wholesale. An old friend related the other day that he could "shovel up the buds" (remnants), after them, and that he shot fifty-five one winter in his garden. I have no hesitation in recommending catching them for pets for somebody, as people will have pets, and why not the destructive birds? They are easily tamed down, endure confinement well, and are pleasant companions, singing their low, plaintive song as well in the house as in the wood where nobody hears them. I have caught—or rather they have placed themselves voluntarily in confinement—twenty-one lately in my garden, and I know full well what a relief this means to fruit growers generally. I may say that there is no mistake that the wood-lark has been exterminated in this locality by bird-catchers, but as regards other species the numbers vary little. Nightingales have been more common this season than ever remembered. I hear of goldfinches of 200 in a flock, and linnets as plentiful, notwithstanding a vast quantity taken with clap-nets in the district. J. HIAM.

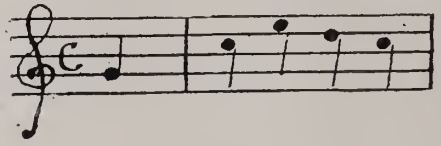
Astwood Bank, Redditch.

Is it wise to ask canary-keepers to give up their canaries? Shall we not repel some of our friends if we ask them to eschew all cage-birds? I rather think so. The innate love which all of our members have for birds is just the reason, I take it, why some of them keep canaries, and this is an affection which must be gratified. I think the keeping of canaries should be encouraged if only to act as an antidote to the desire to capture wild birds which every one must have felt at some time or other. I regard the keeping of canaries as a potent means of protection of wild birds. EDWARD A. MARTIN.

Are the Wild Birds Protection Orders to remain a dead letter?—No, not in this district. Three seasons since we realised that the notice issued by the R.S.P.C.A. was unsuitable with its long schedule of birds, mostly comprising species unknown in the county, so we had printed a sheet Caution Notice (without any schedule or London address), particularly identifying it with "the nearest police station." These cost thirty-five shillings per 1,000, including posting. Every March and April they have been circulated over a large suburban area, and this summer, by the kindness of our School Board, posted up in all their schools. The result is certainly satisfactory.

Liverpool. C.

Is the Blackbird imitative?—Your correspondent "S. A. Hawes" asks if the blackbird is imitative, as she (or he) has heard it begin its song with the bugle notes printed. These notes are certainly not the blackbird's own song, which begins with the notes I have given here. I used, when a child, to think that it began with the first notes of "Dixie's Land," and was provoked that it did not finish the tune. MARIAN H. MASON.



Cuckoo.—A correspondent writes from Bideford, Devon: "Three people have told me that at noon on Sunday, September 4, they distinctly and undoubtedly heard the cuckoo. Unfortunately they did not see the bird, and I cannot authenticate their statement further than that each hearer (though not all at the same standpoint) was quite convinced it was a genuine 'cuckoo.' Possibly the occurrence may seem worthy of being noted."

Swallows and Martins.—There have been several letters of late in the daily papers on the diminution in numbers of swallows and martins throughout the kingdom. This may be true; though it is not very noticeable hereabouts. Several suggestions are made to preserve these birds, which are especially dear to everybody, and as useful as dear. I know of but one remedy, and that is to prevent the sparrow from appropriating their nests. It is easily done. I make it a rule to destroy any brood of sparrows I find in the nests of swallows or martins;

for if they grow up they are sure to copy the parasitical habits of their parents. A robber sparrow can easily be frightened from the nest he has appropriated, and will fly to the nearest tree, where he can be shot. All sparrows that roost in other birds' nests in winter should be destroyed. In advocating this plan I run very little risk of being pulled up by Selbornians. None of us want to exterminate the sparrow; but we would curb his bad habits. Swallows and martins soon find out the kindly help of man. Here, owing to the trees, a great harbour for birds, they have much difficulty in maintaining a foothold, in spite of my help: for the sparrows are in the ascendancy. In the village, however, they are more fortunate. One poor man especially protects them, and their nests almost touch each other under the eaves of his house. A friend of mine, a good naturalist, lately shot a sparrow for pulling a martin out of her nest by the "scruff of the neck!" EDWARD THOS. DAUBENY.

Market Weston, Thetford.

Crossbills.—One afternoon in the middle of August, when standing on a bridge over a stream between two "plantains" of firs, I came across a flock of about twenty crossbills. At first I could only obtain a distant view of them as they flew across the tops of the trees. Soon, however, a pair settled on the branch of a chestnut tree close by, which hid them from my sight. I was sorely tempted to move a little so as to have a look at them, but luckily desisted. They then flew down to the stream, one on the bank and the other on the stem of a plant in the water, to drink, where I had a good view of both. They were male and female. These birds fly strongly, and not unlike a hawfinch. Their note somewhat reminds one of that bird, but is more metallic in tone, and not so harsh. They often cry out together in chorus, and are then quiet for a few minutes; after which one or two will utter their note. They seem always to call out as they fly. In making observations of this kind I have long learned the value of stillness and silence, without which an opportunity is often lost. Many birds soon regain confidence, and do not object to our presence, if we will only be quiet and still. I have stood in front of a bush in which I knew there was a grasshopper warbler, a very shy bird, and have seen him come out and sing on an exposed branch, regardless of my being barely ten yards off. I have had a Norfolk plover walk close past me as I stood before him in the open daylight, and a kingfisher fly under my arm as I leaned against a gate. The observer should avoid creaking boots and loud colours. EDWARD THOS. DAUBENY.

Market Weston, Thetford.

Moorhen and Carp.—On August 31, the evening being only moderately warm, some children were throwing pieces of bread to the fish (carp, I believe), in the lake in Battersea Park. The carp were executing all sorts of upward and broadside manœuvres, occasionally leaping a little out of the water. One could hear the excited smacking of their jaws. A moorhen came up, making the jerks and minces peculiar to the species. After several attempts it succeeded in snatching up a morsel of bread, but was instantly bitten on the leg by a carp, apparently through mistake. With a cry of pain, the moorhen flew to the island, twenty or thirty yards away, where it ate its food. Four or five ducks then swam rapidly to the bread, and soon cleared it away.

Clapham Junction. W. JOHNSON.

Wasps are very numerous and destructive this season, and measures should be taken to destroy nests before the young queens quit them for next year's supply. This should be done early in October, if not carried out before.

JAMES HIAM.

SELBORNE SOCIETY NOTICES.

The Late Mr. T. F. Wakefield.—At a special Council meeting, held on Tuesday, September 20, on the proposition of Mr. G. Edwards, seconded by Mr. Basil Martin, it was resolved "that the Council of the Selborne Society hears with much sorrow of the death of Mr. T. F. Wakefield, for some years one of the Vice-Presidents of the Society, and in conveying to Mrs. Wakefield and her family the expression of its sincere sympathy, desires to place on record its warm appreciation of the many services Mr. Wakefield has rendered the Society, both on its Council and in connection with the Lower Thames Valley Branch."

Notice of Special General Meeting:—In regard to the proposal put forward by Mr. R. Marshman Wattson to increase the amount of the branch contributions payable to the general funds of the Society, notice is hereby given that a Special General Meeting will be held at 20, Hanover Square, W., on Tuesday, October 18, at 6.30 p.m., to consider the proposition. The present rule is that 10 per cent. of the receipts from subscriptions shall be paid over towards the general expenses. The proposal is to increase the contribution to 1s. (or 20 per cent.) for subscriptions of 5s. and upwards.

Field Club Saturday Rambles:—

October 1.—Cheshunt "Great House" and Church, viâ Waltham Cross and Theobald's Park. Tea in Banqueting Hall at 5. Liverpool Street 2.15 to Waltham Cross (slip carriage only). Guide, Mr. W. B. Gerish.

October 15.—On this date a fungus foray to Wimbledon Common will be conducted by Mr. Rivers in connection with the Lambeth Field Club. Selborne Society Members are invited to be present.

Council and Committee Meetings:—The next meetings of the Council will be held on Tuesdays, October 4 and November 1 at 5.30; of the Magazine and Leaflet Committee on October 18 and November 15, at 5.30.

Selborne Society Badges:—The attention of members is called to the recognised badge of the Society, which was designed by Mr. John Fullwood, and can be had of the Secretary, as follows. Prices: Brooch, 3s.; solitaire, 1s. 9d.; pin, 1s. 6d. pendant, 1s. 6d. They are tastefully designed in pale blue and silver, Councillors' badges having a crimson centre. They are especially useful as a means of identification between Selbornians at branch meetings, or at Field Club Rambles.

ANSWERS TO CORRESPONDENTS.

C. S. R.—*Pimpinella magna L.* Umbellifers should, if possible, be collected with ripe fruit.

Lilly Hargraves.—The scarlet flower is that of *Mimulus glutinosus* Wendl, a native of California. The other plant is *Euphorbia Lathysis L.*, the Caper Spurge, which is commonly naturalized in gardens.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 34, Argyll Mansions, Addison Bridge, London, W.; letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W.

Nature Notes:
The Selborne Society's Magazine.

No. 107. NOVEMBER, 1898. Vol. IX.

SELBORNIANA.

Financial Position of the Society.—The Council wishes to draw attention to the requirements of the fund of the Society for general purposes. A few words of explanation may be useful. The fund is supported by the contributions from Branches of one-tenth of their receipts, and by the subscriptions of members not belonging to Branches. There has been a tendency for the latter to decrease. This may probably be due to the policy of the Society in encouraging the formation of local Branches as the most efficient instruments of its work—an excellent and approved policy, but having apparently this one unfortunate result.

Out of the subscriptions of members not belonging to Branches the Society pays the cost of the copies of Nature Notes supplied to such members. The Branches pay the Society for the copies of Nature Notes required for their members.

After the cost of the magazine had been defrayed the income of the Society as a whole for all other purposes was in 1897 only about £85. This is not sufficient even for necessary expenses, which amounted in 1897 to about £106. There is, also, an adverse balance of £92 19s. The first need is to rectify this balance and to provide adequately for necessary expenses. This is essential. But more is wanted. Though the Society relies largely on the power of personal influence and example, it is hardly necessary to state that for the prosecution of its work generally in many directions, and for useful action in special cases, money is a needful instrument. To satisfy these requirements the Council seeks to obtain both a substantial increase in the number of members subscribing annually to the general fund, and also donations.

Selborne.—Mr. Edmund H. New, of Green Hill, Evesham, writes: "The author of 'An Autumn Day at Selborne' in your October number alludes to the diagonal pathway up the Hanger, leading from the bottom of the Zigzag, as the 'Bosco.' This is a mistake for 'Bostal.' Gilbert White describes the construction of this walk in one of his letters published in the second volume of Professor Bell's most valuable edition of 'The Natural History and Antiquities of Selborne.' It was made in the autumn of the year 1780."

Miss E. Giberne writes: "If any readers of Nature Notes wish to spend a few days at Selborne, I can highly recommend some lodgings there: Miss Phillips, Myrtle Cottage. They will find them very comfortable: one bedroom and sitting room for 15s. a week."

Barbarity at the Crystal Palace.—We are sorry to notice that the National British Bird and Mule Club and the Foreign Bird Exhibitors' League, among whose judges appear the names of the Revs. F. G. Dutton and H. D. Astley, M.A., and that of Dr. C. S. Simpson, in their recent show at the Crystal Palace, countenanced the exhibition of nightingales, woodpeckers, wagtails, swallows and other wild birds, in cages measuring only 12 inches by 4. Comment is needless.

Port Madoc Light Railway Scheme.—Miss Blanche Atkinson desires to thank all the members of the Selborne Society who kindly signed, and sent to her, the Petition promoted by the Barmouth Branch of the Selborne Society, against the proposed light railway through the pass of Aberglaslyn, and especially the editor of Nature Notes for printing the leaflet with the form of the Petition, issued with the August number of Nature Notes. The Petition was signed by about 2,000 persons. Probably many more signatures would have been procured had it not been the holiday month. The scheme collapsed at an early stage of the local enquiry owing to some technical mistake of the promoters, and the beautiful Pass is saved for the present; but there is no doubt that a petition bearing the names of John Ruskin, G. F. Watts, R.A., Sir W. B. Richmond, R.A., Alfred Austin (Poet Laureate), the Duke of Westminster, the Earl of Carlisle, the Dean of Durham, Miss Frances Power Cobbe, Marianne Farningham, Professor Hopkinson, Professor Boulger, Professor Percy Gardner, Professor Hewins, the Right Hons. James Bryce, G. Shaw Lefevre, and many artists, will not be without effect should the scheme be renewed.

The Story of the Farm.—The Rural World Publishing Co. has just issued a small volume by Professor Long, entitled "The Story of the Farm." Lady Warwick, we understand, has written an introduction. The book deals with the economic and social sides of the agricultural question.

DOLL AND THE STARLING.

A Morning Call.

However early Doll the maid must rise,
Albeit her master late last night did sup,
She hears a voice that down the chimney cries,
"Get up, good Dorothy, get up, get up."

Then if she turns again to sleep, she hears
A dog that barks for entrance at the door,
Or pussy with loud mewing fills her ears,
To beg her place the milk bowl on the floor.

Still Doll the maid for slumber will not stir;
So the voice changes,—startled in her dream
The butter paddles of the churning whirr,
She needs must rise or spoil a whole week's cream.

And down the chimney sounds the wakeful voice,
"Although your master late last night did sup,
Your work is waiting, and you have no choice
But do it, Dorothy, get up, get up."

H. D. Rawnsley.

FORESTRY.

(*Concluded from p.* 193.)

NOW we come to Germany, whose territory, it is true, does not touch the Mediterranean, though German people speaking the language of the Fatherland inhabit the country from the frontiers of the empire to the port of Trieste. The home of forestry is Germany, and here we look for the best methods of forest management. The science has been a progressive one, and whilst anything like a description of present or former systems must be left for other possible occasions, I may say here—quoting the late Dr. J. C. Brown—that "In the advanced forest economy of the Continent reliance is placed upon natural reproduction by self-sown seed; and artificial sowing or planting is employed only to fill spaces which may have been left blank in this process, and in the creation of new forests as in the reboisement of mountains, or the fixing and utilisation of drift sands." The Royal Forest Academies of Prussia have been mentioned in my former paper, and in Saxony, Wurtemburg, Baden, Bavaria and other states, are to be found similar State institutions. Austria has no less than nine Imperial Schools.

A residence of two years in the interior of Germany has

convinced me that, had not the people of that country taken in hand seriously, as they did at the commencement of the 18th century, the maintenance and re-growing of their forests, the land would long ere this have become worse than Spain (which has the sea round it for the most part to moderate, to some extent, the drought), the climate would have greatly suffered, the population would have diminished and deteriorated, and no conquering armies would have crossed the Rhine in 1870.

Greece next claims our attention, where Plato, four centuries before the Christian era, lamented the loss of the shady forests of earlier times. This country, once so rich in trees, had almost entirely lost them before the Roman epoch. The upper part of the Balkan peninsula has fortunately escaped some of the evils of civilisation, and Servia and Bosnia, for instance, have beautiful forests. But the isles of Greece have suffered sadly: Crete, left with a few olive trees, has now lost nearly all those during the recent troubles. The Cyclades were long ago cleared of trees, and the same work has gone on in the Ionian Islands. As to Cyprus, when Mr. Chamberlain received a deputation at the Colonial Office at the beginning of last year, Sir George Birdwood, after referring to the experience he had had in India, said that it was imperative in this island, as it had been found in India, to re-afforest the country, which would improve its climate and give natural irrigation.

Russia I have spoken of in my former paper. She is very reckless about forests. Asia Minor has still fine forests in the northern mountains, but the central plateau is almost destitute of wood, and so of water. Syria presents a sad spectacle: the Biblical history tells us of the early fertility of this land; but in these days the cedars of Lebanon are represented by a few solitary specimens, and the general aspect of the country is one of poverty and barrenness. Especially is this so around Jerusalem, as has been remarked by M. Renan, who resided for some time in Palestine to gather material for his "Vie de Jesus," and other works. Look at the map, it is covered with dotted lines—these are dry water courses traced through barren desert land, which were once perennial streams running through woods and fertile fields. The Bible names several forests whose sites have been identified, and now present to the traveller's eye nought but rocks and sand.

Persia has lost her forests, excepting a few in the north, and who can doubt that the valley of the Euphrates and Tigris, with its huge cities of ancient days, was then highly fertile with abundance of trees? They have gone, and with them has disappeared the Babylonian power. The cities are buried by the shifting sand of a great desert created by man's folly.

The same story is repeated in Arabia, which Mahomet wished to see replanted, saying the country should be made a garden of trees; and in Egypt we have visible evidence at this day from petrified remains, that the hill slopes on each side of

the Nile valley were covered by trees. What a different aspect must that ancient home of civilisation have presented in the early ages to what it does now. I would here recall the fact that since the upper provinces of Egypt fell under the baneful rule of the Khalifa, the date palms, a source of wealth and basis for taxation, have been much reduced in numbers.

One step further brings us to Northern Africa, with its vast desert of Sahara, which was once believed to be the even bed of an ancient sea, it being only needed to cut a waterway from the Mediterranean or Atlantic to flood it; but now we find that it has a very varied surface, with mountains rising to an altitude of 8,000 feet, the beds of dried-up rivers and water not far from the surface in many parts, generally at depths of from 10 to 300 feet, and in abundance. Some of the mountains are snow-capped for three months of the year, and when the snow melts the river-beds are filled with roaring torrents, which are lost in the sand before they get to the sea. This was not always so, the rivers Ighargar and Mya once found their way to the Mediterranean through the *shotts* or salt lakes of Algeria and Tunis. This, with the other information we have, points to the conclusion that this vast territory was once, thousands of years ago, a fertile land, the seat of an ancient civilisation, and that its present condition is to be attributed to the agency of man in cutting down the forests. Those of us who have watched the doings of the French people in Africa know that they have persistently endeavoured, and are now doing their utmost, to obtain possession of the entire land surrounding the Sahara, that they are at this minute exploiting the desert, opening up fresh trade routes across it, sinking wells and planting trees, and who shall say that within the next two or three centuries the great Sahara may not be again under man's control, with sufficient trees and forests and water in the rivers, and supporting a population numbering its hundreds of millions, instead of the possibly two and a-half millions of the present day?

Indeed, it does not seem to be other than the truth to say that the great expanses of sandy desert are not the result of natural causes, but the result of man's destructive work. Of course there must be portions of the earth without trees: a drive into the Engadine over the Fluela Pass will convince one of this, for as one approaches the pass the fir trees become smaller and smaller till they cease to exist. But when it is suggested that the deserts of Sahara, of Egypt, of Arabia, of India, are natural deserts, I, for one, cannot believe it. All these deserts can and will be, in my opinion, reclaimed by man. These may be large ideas, but they are not too large for scientific Frenchmen, who, let us remember, cut the Suez Canal, when we said it was an impracticable scheme. The African railways spoken of in M. Zola's "Paris" will ere long be a reality.

This essay will be quite incomplete without some reference to the British Empire. One might expect, with the great extent

of our colonies and dependencies, that in England, in the heart of the Empire, forestry would receive the attention that it deserves, but this is not so and the reason is easy to find. Britain is a moderate sized island, so is Ireland: in no part of either can you get further than 100 miles from the sea, if so far: the consequence is that the air is constantly kept moist, and the climate moderated and rendered more equable than it can be in the interior of great continents. Moreover, the climate is rendered the milder by the warm current of the Gulf Stream, which breaks upon and flows past our western shores: this stream brings with it warm vapours which soon precipitate in rain, and so it comes that for climatic purposes the 4 per cent. of land that we have in England covered by trees, suffices. Our climate is moist and mild enough, generally speaking, without our growing more trees than we do, still there are many rough or sandy spaces unsuited for grass or tillage, and deserted farms, that might well be turned into forest, to say nothing of the neglect of our orchards in many counties, where replanting is much needed to take the place of old and worn-out trees.

In this connection the report of the Recess Committee on the establishment of a department of Agriculture and Industries for Ireland, made in 1896, recommends the re-afforesting of waste land in that country on a very large scale, and it has been pointed out that had the Government, at the time of the potato famine in 1847, purchased lands that could have been had for quite a nominal figure and planted them, they would now possess great forests, which would have benefited thousands of indigent persons by employing them in planting them, and would now be the support of many more thousands in affluence, whilst the forests would be a source of profit to the State, as they are in India, and ameliorate the climate. It has also been mentioned that much work in forests can be done in winter when the ordinary harvests are past, and there are many hands idle that usually find other out-of-door occupation.

England contains no Government school of forestry as in other European countries, and in the United Kingdom we have no means of training forestry experts. In arboriculture, or the growing of trees for ornamental purposes, we excel all other people, but in sylviculture, or forestry proper, we are backward. Scotland pays more attention to forestry, the subject being forced upon her by the rigours of her climate and the bleakness of her hillsides, where trees for shelter are more required than in the southern portion of our island. In India also forestry has been forced upon us: there the climate was found to be going from bad to worse from the constant destruction of forests—imagine 85,000 men in one district engaged in felling, burning and destroying, so as to get one or two crops grown on the spaces cleared,—and during the last half century the matter has been seriously taken in hand, so that we have now an organised forest department of the Indian Government. The

officers of that department are trained partly at the Indian School of Engineering at Cooper's Hill, partly with foresters in Scotland, and a portion of the course of study is at one of the foreign schools in Germany or France. This system has its advantages, for whilst a young man has some difficulty in fully profiting by education abroad in a language not his own, yet it must be remembered that the climate in summer in Central Germany and Southern France is much more like what is experienced in India than anything we are accustomed to at home. That there is room for much to be done in India is shown by this, that whereas in Germany one quarter of the land is under trees, in our Eastern Empire, so far as I can see, the proportion of forest is considerably less.

Can we then wonder at the famine of two years ago? Twenty years before that we were also face to face with a similar calamity, and it was then pointed out by experts in the *Times* newspaper and other periodicals, that the famines that recur in India and other countries from time to time, are due to the thoughtless destruction of forests that had been going on, almost unchecked, for thousands of years. In the *Journal of Forestry*, in 1877, it was said that the little that Government had done through the Indian forest department was as a drop in the ocean, and life and energy was called for to be thrown into the business, and it was stated that the only way to produce more rain in India and effectually stop famines, was to keep on planting trees till the climate was restored to a proper equilibrium. It was useless to construct reservoirs and irrigation works without creating a supply of water to fill them.

It is much to be regretted, not only that we have no English school of forestry, but also that the rudiments of the science are not taught in every school throughout the country. We pay heavily, it seems, for teaching our children some subjects that are altogether impractical and useless. Were this changed, persons when leaving these shores to seek their fortunes in the colonies would not look upon the forest as an enemy to be destroyed in reckless fashion, but as a precious possession, which a proper proportion of should be jealously preserved for our own good and the good of those that come after us. Trees in low-lying situations that favour malarious swamps, as at the mouths of some of our colonial rivers, cannot, of course, be too soon removed.

In these days we hear much of Rhodesia and the Chartered Company; the settlers in that country feel the want of shade, and it is satisfactory to observe that Mr. Cecil Rhodes fully understands the importance of forestry, so we may hope that those who come under his influence may imbibe his foresight in this respect, and that we may soon see that land, where Syrians in the time of Solomon worked the gold mines, and destroyed the forests to make charcoal for smelting purposes, replanted by our colonists.

We English are accustomed to consider ourselves as the only nation that can colonise, and to laugh at the attempts of others; but there is one consolation in Germans, French and Belgians having a footing in Africa, *i.e.*, they may be trusted to plant trees where they are required, and not to utterly destroy the primeval forest. There is, therefore, some hope that the sources of the Nile are not in too great danger, for no one would relish the idea of that grand river diminishing greatly in volume and losing itself in the desert, instead of its waters passing on by Cairo and discharging into the Mediterranean.

I ought to say that some of our colonies, and notably South Au stralia, are taking much interest in forestry.

GILES A. DAUBENY.

Tuckton, Christchurch, Hants.
August 24, 1898.

A HOSTELRY FOR SWALLOWS.

SEPTEMBER 18, 1898.—In the middle of this month I have generally been away from home, and for several years past I have haunted the coast of Dorset at this time, observing the migration of swallows and martins from west to east. This year it has happened that I have stayed in my own county of Oxfordshire, and have been lucky enough to witness migration going on for several days, on a scale almost as vast as on the southern coast. It is no doubt a familiar sight to those who watch the movements of birds, but few have leisure or perseverance to follow it closely; and what little I have to tell may be of interest to the readers of NATURE NOTES.

It was at sunset on September 8, the hottest day of the year, when the thermometer at Greenwich reached 92° in the shade, that I strolled down to the banks of our stream with a friend who wished to search for moths in a certain osier-bed. While he was so engaged, I became aware of an extraordinary gathering of swallows over my head. They seemed to be coming in large parties from the north and west, all of which were uniting in one vast congregation immediately over the osier-bed: as I watched, the numbers steadily increased, until the appearance was that of a dense swarm of gnats high up in the air over my head. Then one large division separated and went off to the south; the rest remained careering at a great height until the sun set, when they began gradually to descend, and by twos and threes to drop suddenly and swiftly into the cover of the osiers.

The next day it happened that I had to leave home to spend two or three days in Lincolnshire, where I found that the swallows had almost all departed from inland towns such as

Grantham and Lincoln—even of martins I saw but very few. The great gathering I had witnessed in Oxfordshire was no doubt one of strangers to our county, and probably of travellers from the north of England—the numbers were far too great to be accounted for as local birds. I may add, by the way, that among them that hot evening there was a very small and swift hawk which I am disposed to think was a merlin accompanying the travellers in their journey from the north or west; but the merlin has been rarely seen so far south in September, and it is quite possible that the bird, which was too far off for me to distinguish it clearly, may have been only a small male sparrow-hawk. I did not see it actually attack any of the swallows.

On the 13th I returned home, and that evening found another immense assembly in the same place. After I had been watching them for some time as they dropped into the osiers like shooting stars—not like falling leaves or snowflakes, but with a swift rush downwards in a slanting direction, which was often changed at right angles as the bird approached the cover—I thought I should like to see for myself what the interior of this vast caravanserai was like when filled with its nightly horde of pilgrims. The osiers were very thick, and full of flies and stinging nettles, and when I emerged from their recesses I was considerably towzled, stung, and bitten, but I was well repaid.

The first birds I saw were not swallows but pied wagtails, looking (as I thought) somewhat nervous and disconcerted at finding their favourite roosting place occupied by this overwhelming flight of strangers: there was also a single yellow wagtail. The swallows were all together in the centre of the osier-bed, as I gathered from the almost deafening chatter and gossip which was going on ahead of me. Pushing on, I came to an open space of a few square yards, and here took my stand. In front of me the osiers were full of swallows, nearly all of them young birds, as far as I could judge by the fast waning light—some so young as to be opening their bills as if wishing to be fed. But there must have been a few old birds among them, for I saw a young one fed two or three times as it sat face to face with one that must have been its parent. I can hardly have been mistaken; and yet one wonders how in these immense flights a parent can keep its young in view and descend with them into this dense cover without losing them. All the birds were perched at a height of from five to ten feet from the ground, for the most part clinging to a leaf or twig at its junction with the stem of the withy. I saw no martins among them.

As I stood there watching, the downward rush continued at short intervals. Several times I thought I should have been hit, so nearly did the bullet-like swish pass by my head in the dusk. Looking up I could see the swarms of real gnats just above me, and up in the sky a cloud of gnat-like swallows still careering about with endless chatter; but the cloud was getting thinner and thinner as they went on dropping into the cover where I stood.

To complete my experience of their operations it only remained for me to try and witness their departure from their lodgings in the morning. This, I knew, must happen about daybreak; but unluckily in these hot days the valley was filled in the early morning with a dense white mist which would have made it impossible for me to see anything of them. At last, however, on the morning of the 18th, the weather had changed, and a little before six I started for the osier-bed. I arrived in the very nick of time. As soon as I came in sight of it I saw that the birds had just left it; some were rising as I looked, but the great mass were already high up in the air. At that very moment the much-needed rain began, and low dark clouds drifted over the valley, soon hiding the birds; but I saw that they rose to a great height, drifting slightly to the northward with the strong south wind, and then slowly turned in the opposite direction, making their way towards the south. How many of them will return next spring? How many will fall victims to the cruelty of the southern peoples who lie in wait for them on the shores of the Mediterranean?

W. Warde Fowler.

A FIELD CLUB RAMBLE.

THE Field Club of the Selborne Society paid a visit on the afternoon of Saturday, September 24, to Banstead Heath and the immediate vicinity. Some of the prettiest parts of Surrey are unfortunately the worst situated so far as railway accommodation is concerned, and trains being proverbially late on Saturday afternoons, the party, twenty-four in number, did not reach Cheam until about half-past three. This was the first visit of the ramblers to the neighbourhood, the aim of the local (Croydon) Branch being to open up fresh country, so far as is possible, each year. From Cheam the route was taken southward towards Banstead by a pleasant lane which some two miles away led out on to Banstead Heath. At this time of the year the "finds" were principally in the form of fruits, only a few wild flowers in blossom being met with. Those found included Bladder-Campion (*Silene Cucubalus*), ragwort (*Senecio Jacobæa*), common calamint (*Calamintha officinalis*), wild basil (*C. Clinopodium*), toad-flax (*Linaria vulgaris*), mignonette (*Reseda lutea*), field scabious (*Scabiosa arvensis*), small scabious (*S. Columbaria*), and the knap-weeds (*Centaurea nigra* and *C. Scabiosa*).

In the sandy lane leading to Banstead Heath the spindle-tree (*Euonymus europæus*) was found to be showing its four-lobed fruits, each seed being clothed in a scarlet lining; buckthorn (*Rhamnus catharticus*), Privet, and Elder, all three with black-

berries, formed a considerable portion of the hedges on both sides. The roses were brilliant with their scarlet hips. On the leaves were seen numerous pea-like insect-galls, the work of *Rhodites eglanteriæ*, which in some cases had been formed on the very edge of the green part of the leaf. The beautiful bedeguar gall of the rose (*Rhodites rosæ*) was also frequently found, and in some of these the filaments were branched, and bore a resemblance to the sepals of the dog-rose. The gaudy berries of the lords-and-ladies (*Arum maculatum*) were now and again seen peeping from beneath the hedge-rows, whilst the hedges were covered by Wild Clematis, in that stage in its life which is known by the appropriate title of "old man's beard." On the Heath were found numerous lengthy stems of Dyer's Rocket, full of seed, whilst here and there the presence of the Harebell betokened the hurrying-on of the seasons. Crossing the Epsom Downs railway near the golf-links, a path was taken across the fields to Banstead village. One of these, a neglected potato-field, yielded two specimens of a white knapweed of the greater kind. Whilst tea was being prepared at the coffee tavern, some members visited an interesting gully-shaped path which led due north out of the village. Two summers ago this was really a lovely footpath. Its beauty has unfortunately been quite marred by the deposition at its commencement of all the broken pots and pans of the neighbourhood, and this in spite of a warning, deterrent notice exhibited by the District Council. After the party had partaken of tea, the route was resumed, in the bright moonlit evening, to Chipstead station, which gave an opportunity to those astronomically inclined to study the firmament of heaven, and to discuss the display of the Northern Lights of Friday, September 9. The 7.39 train was taken to Purley, Croydon, or London. The meeting was a representative one. The ramblers present included members from Yorkshire, Woolwich, Hackney, Norwood, Croydon, Barnes, Clapton, and Thornton Heath. From a geological point of view, it may be added that when starting from Cheam the road beneath the railway was cut deeply into the chalk, which, however, was capped by beds of the Reading series. The sands of these beds were seen in the route to the Heath, the road being covered by dry loose sand which made the walking somewhat fatiguing. At Epsom Waterworks a well, made in 1889, was bored through nineteen and a half feet of the Reading beds, and thirty-one feet of Thanet sand. These Tertiaries appear in patches at various places on the North Downs, and are probably present on Banstead Heath.

Thornton Heath. EDWARD A. MARTIN.

REVIEWS AND EXCHANGES.

Observations upon the Topography and Climate of Crowborough Hill, Sussex. By C. Leeson Prince. Second edition. Privately printed. Lewes, 1898, 8vo, pp. 312.

This handsome work, which has been presented to the library of the Society by the author, is so full of varied Selbornian interest that we feel inclined to regret that it is only printed for private circulation. Possibly the meteorological tables for the past twenty-four years and much of the detail in Chapter v., which deals with twenty-seven years, may be important only to the meteorologist; but most nature-lovers would be interested in the wonderful list of distant objects visible from Crowborough, in the snow-crystals, the gigantic hailstones, the aurora and the mock suns recorded. Many of Dr. Prince's weather-prognostics have, it is true, appeared in Mr. Inwards' "Weather-Lore," recently reviewed by us; but there certainly seems to us to be ample material here for a smaller work of the nature of a Crowborough calendar, which should secure many readers. We are grateful to the author for having reprinted most of what is worth preserving of the poetry in that nearly forgotten store-house, Thomas Forster's "Perennial Calendar."

Elizabeth and Her German Garden. Macmillan. Price 6s.

We have managed to pass a wet Sunday afternoon so agreeably by aid of this very pleasantly written book that we can have no hesitation in advising others to go and do likewise. Had it been the first of its family, indeed, our praise might have been more enthusiastic; but as it is only the youngest of a group of books rather popular with a certain class of readers in the present day, viz., "Ros Rosarum" and "A Garden of Pleasure" by the Hon. Mrs. Boyle, "Pot-pourri from a Surrey Garden" by Mrs. Earle, and "The Confessions of an Amateur Gardener," it naturally challenges comparisons which would not otherwise fall to its lot. All these books resemble each other in certain respects. They all deal with gardens and gardening on a generous scale, gossiped about in an easy, discursive, dilettante fashion, and interlarded with pleasant little domestic touches, and scraps, more or less smart or pertinent, of feminine philosophising. They are all written by ladies, and in a cultured and graceful style which rarely descends to pedantry or rises to originality, and is not over-weighted—some people may perhaps think is not weighted enough—by the more prosaic details and technicalities of the subject under discussion. They are all, in fact, books of which we can feel that the writing them has afforded a pleasant occupation for the leisure hours of ladies of property; while the reading them will fulfil the same office for other ladies of the same class. Where "Elizabeth" has the pull (in point of originality) is that her garden is a German one, the authoress being evidently (and none the less evidently for her frequent allusions to herself as a "foreigner"!) a young English lady married to the noble proprietor of a large estate in the north-east of Prussia. It is of this estate, or rather of the re-laying out of a flower garden which has been allowed to degenerate into a wilderness, that she gossips, and gossips so pleasantly that we are inclined to forgive her when, having come to the end, we try to garner up our sheaf of added knowledge from the field she has opened to us, and find little beyond a long list of standard roses hardy enough to endure a Prussian winter, whose colours tone prettily above a carpet bedding of purple pansies or mignonette; and the description of one or two flower borders, an arrangement in red, also of roses; and in yellow—"*the chief feature of which is to be the number of 'ardent marigolds'—flowers that I very tenderly love, and nasturtiums. The nasturtiums are to be of every sort and shade, and are to climb and creep and grow in bushes, and show their lovely flowers and leaves to the best advantage. Then there are to be eschscholtzias, dahlias, sunflowers, zinnias, scabiosa, portulaca, yellow violas, yellow stocks, yellow sweet peas, yellow lupins, everything that is yellow or has a yellow variety: and the place I have chosen is a long, wide border in the sun, at the foot of a grassy slope crowned with lilacs and pines and facing south east.*"

That is "the idea;" but whether it comes off successfully Elizabeth does not say. She owns to "lots of failures" without specifying them or their causes

with such particularity as to aid her readers in avoiding similar ones ; and indeed as these latter may not be in the same happy position as herself and her sister authoresses, and able to apply her remedy of sitting down to write a cheque for a few hundred more trees or plants in place of those sacrificed, the omissions matter little perhaps. What matters more to her than the details of her gardening are the garden itself and her own passionate delight in it, with its acres of flowering lilacs and bird cherries wreathed in blossom, its copses of pine and birch trees, its background of golden cornfields and shadowy deer forests, all bathed and jocund in the pure, bracing Prussian air and dazzling sunshine, which she describes so vividly, and with such an absolute *abandon* of enjoyment as to carry her reader with her and almost enable him to share in the exhilaration of the happy *chatelaine* of this North German paradise. What will English people, however, think of a Paradise marred by such slavery as that in which the wretched peasants labouring on it are held : a slavery which does not admit of the female hands even knocking off field labour for more than a few hours before and after the birth of a child !

"*It is quite a usual thing to see them working in the fields of a morning and again in the afternoon*," says the author, "*having in the interval produced a baby*," and from her way of mentioning the fact, Elizabeth (though she professes to compassionate the hapless victims of this tyranny) does not seem to be as much impressed by the horror and barbarism of it as are her readers, who will scarcely be surprised to read on the next page of how these labourers desert in gangs of fifty at a time ; while their overseer goes about among them with a loaded revolver in his pocket.

Of her own babies she discourses very agreeably, and very charming little people they are : "the April baby" in particular, whose devoted admiration of her governess and misdirected attempt to please her by reproducing on her own chubby face "*after much struggling, and by aid of a lead pencil and unbounded love*" the moustache which nature has bestowed on "Miss Jones," is a bit which, did space permit, we should like to quote in full.

But here we must draw the line of praise. Elizabeth's garden and Elizabeth's babies are charming ; but when she brings her husband—"the Man of Wrath," as for some occult reason she chooses to call him—on the scene, and permits him to prose to us for pages and pages together, we become bored—bored to extinction ; and when, in addition to this, she has visitors to stay with her (in the winter time), and indulges them—and herself—in disquisitions of equal length on all manner of topics, neither interesting in themselves nor in any way germane to the subject of the book, our sense of boredom increases ; and we begin to wish either that the summer would return and allow Elizabeth to sally forth into her garden again, or that she would succeed in carrying out her very frankly expressed desire of getting rid of the said visitors many pages before this is achieved.

The almost appalling frankness indeed with which this fair authoress describes and comments on her Prussian relations and acquaintances is probably the reason (and a sufficient one !) for the book being published anonymously ; but both they and her discussions with them might have been omitted from it altogether, not only without detriment, but with decided advantage to an otherwise very agreeable volume.

Skertchly's Geology. Revised by James Monckman, D.Sc.Lond. Thomas Murby, 1898, 8vo, pp. viii. and 256. Price 1s. 6d.

THOUGH we altogether demur to the publisher's announcement that no other book at present covers all the requirements of the South Kensington syllabus, it cannot be denied that, as revised by Dr. Monckman, this is an excellent and very cheap manual, sufficient for students for the Elementary Stage examination, and almost so for those aiming at the Advanced Stage. The supplementary section is excellent, especially in its petrology, though we regret the retention of Naumann's notation for crystals. There is, however, room for much further revision, chiefly in the earlier part of the work. It is absurd to continue to speak of the work of nearly thirty years ago as "recent" (pp. 11, 134, &c.) ; "Sir William Thompson" (p. 15) has now for some years been Lord Kelvin ; whilst "Professor Wallace" would indicate one of two persons, neither of

whom is the Mr. Alfred Russel Wallace intended. There is an unpleasantly Welsh look about "Llamellibranchiata" (p. 99): the account of the so-called "Laurentian" is altogether inadequate, there being no such rocks in Gloucestershire (p. 108), whilst *Eozoon* should not now be mentioned as organic, without qualification. The Oligocene appearing as "Fluvio-marine Series" under Eocene; the Bovey beds as Miocene, and the Lenham, St. Erth, Cromer, Westleton and Mundesley beds being omitted, the work can hardly be termed "up-to-date." The absence of any indication of scale to the figures, so that *Textularia* appears equal in size to *Pectunculus*, and the comparative incompleteness of the Index, from which, for example, we notice the absence of "Laccolites" and "Thrust-planes," are serious defects in what might have been made a most complete introduction to geology.

The Truth about the Game Laws. By J. Connell. With a preface by Robert Buchanan. Humanitarian League, 1898, pp. 85. Price 6d.

This is undoubtedly a strong, though temperately worded, indictment of the whole of our Game Laws, based largely upon the report of the Select Committee of the House of Commons in 1845-6. We quote the following summary from the concluding chapter:—"We have shown that the outcome of the game-preserving system is a very serious diminution of the food supply of the people, by the destruction of crops, the difficulties placed in the way of improved methods of farming, and the hindrances to the reclamation of waste lands which might be made productive. We have shown that game as food forms no sensible set-off to these disadvantages, and that the administration of the Game Laws by the very people who preserve the game (administered by any other class they would soon fall into disuse) leads to decisions dictated not so much by the evidence adduced, or the demands of justice and humanity, as by the strong feeling and excitement inseparable from the chase and all that belongs to it. Sentences of fine and imprisonment not warranted by the Acts, harsh as are the latter, frequently call for the intervention of the Home Office, and show the demoralisation of the magisterial mind. We have shown that this severity almost invariably impresses the labourers with the idea that they are the victims of injustice. Knowing that game preserving is frequently the cause of the want of employment from which they suffer, and being accustomed from childhood to regard the game as nobody's property, the harsh administration of these laws inspires them with a spirit of revolt which is as dangerous as it is avoidable. We have shown that the game cannot be guarded without an expenditure of human blood for which no amusement can ever compensate. We have shown that the practice of killing game for amusement inspires even educated men with a pride in sanguinary feats which would disgust many professional butchers. . . . Finally, we have shown that the net result of the whole system is that the game, which is bred and reared artificially, and to an unnatural extent, in order that it may be killed, can only be preserved in sufficient numbers to satisfy the landowners by destroying many beautiful animals, which, if allowed to live, would have maintained Nature's balance. . . . There is but one remedy for the evils enumerated in this pamphlet, and that is to sweep the Game Laws away. A moment's consideration will show that the evils are inseparable from the operation of the laws, and that no modification of the latter can do more than mitigate the former. The only *remedy* is abolition."

Lectures for Children. By Mrs. Suckling. Humanitarian League: Useful Birds, Frogs and Toads, The Spider, The Ant. Price 4d. each, net.

These clearly printed notes for lantern lectures seem well adapted for their purpose, though we do not quite gather the utility of the illustrations, which are not in themselves very good. Considering the abundant marvels of Nature, we hope that care will be taken to admit none but true anecdotes into this series of lectures. Some of the verse is hardly worth printing.

Report and Transactions of the South-eastern Union of Scientific Societies for 1898. Taylor and Francis. 8vo., pp. xxiv. and 117. Price 2s. unbound, 3s. in cloth.

Considering that the South-eastern Union has only just completed the second year of its existence, it may certainly be congratulated on the goodly proportions

of this annual volume, whilst since it has employed a London printer and publisher there is no complaint to make as to the "get up" of its publication. The papers are of varied interest, and several of them deal with local natural history, whilst others treat of those general matters, such as ideals and methods, which, after all, are the main *raison d'être* of a Union as distinguished from that of local societies. This Report ought to suggest to all societies in London or the south-eastern counties, however small, the desirability of becoming affiliated to the Union, and should also secure a very large enlistment of members and associates for the next Annual Congress, which takes place at Rochester in June.

The Essex Naturalist, vol. x., Nos. 4-12, April—December, 1897.

These numbers, which we have only received some time after the date of publication, show that the Essex Field Club continues to do scientific work not excelled in thoroughness, variety, and truly local character by that of any other county natural-history society. They contain numerous interesting notes, one of which (p. 141) refers to the use of Colchester native oysters by the officers of the Roman army at Gloucester, as discovered by Mr. John Bellows—whose name, by the way, is misprinted as "Bellews." We are glad to see, from a note to a paper on "The Protection of Wild Birds in Essex," that the editor adopts Mr. Collinson's principle of scheduling not the protected, but, if any, the unprotected birds. The Club, at its 171st ordinary meeting, held on the beautiful lawn of Lord and Lady Warwick's residence, Easton Lodge, on July 21, 1897, spoke out plainly as to the necessity of checking the extermination of plants, insects, birds, and other animals, now in progress. We agree with Mr. Harting (p. 182) that more may probably be done for protection by good natural-history teaching in schools, especially boys' schools, than by Acts of Parliament or Orders in Council.

The Naturalist for October is as thorough as usual. With reference to the charge against squirrels of killing young birds, Mr. Oxley Grabham writes:—"I have twice caught a squirrel *in flagrante delicto*. . . . In one case the victim was a young thrush, and in the other case a chaffinch. I know of one wood where nearly all the squirrels were killed under the belief that they played the mischief with the young birds, but this, in my opinion, was a great mistake, as I am borne out in my idea by several excellent naturalists, that it is, as a rule, only one pair of squirrels out of a community that take to these evil courses. They, I admit, want shooting at once, but it is a great pity to make the many suffer for the sins of the few."

Hand and Eye, June—September (Newman & Co.). We should before this have directed the attention of those who are interested in educational, and especially in kindergarten work, to the valuable series of articles that are appearing in this journal from the pen of Mr. Francis J. Rowbotham. They are, we understand, to be deservedly reproduced in volume form.

Science Gossip for October is a good average number. The Rev. J. W. Horsley, an enthusiastic naturalist, must naturally have been hugely amused when he lit upon such a gem as Mr. Frederick Whymper's account of the mungoose in *Good Words* for 1884 (p. 156) as "a bird known as the kingfisher of Australia, and secretary bird of Africa." This is as good as Herr Borchgrevinck's "flights of penguins," and the wombats of Sir George Newnes' more notorious naturalist. These flights of the imagination may escape even editorial vigilance; but perhaps it is a little cruel to pillory them after fourteen years.

The Animal's Friend for October is certainly remarkable for the excellence of its illustrations, which are as good as process blocks can be; and, as usual, we prefer the Children's Supplement to the journal itself. There is some danger, however, in the anecdote of a child unmolested in a bear's cage. It would be a pity to encourage any child, on the strength of this story, to put itself in such a position.

Our Animal Friends for October, now that the war is over, wisely considers the "new mission field" that the United States has before it. "Here," says this excellent journal, "the most distinguished prelates of the Roman Church are earnest and principled in their sympathy for the cause of animal protection, and to them, rather than to any other power or agency, we shall look for an exten-

sion of the same humane, Christian principles in our new possessions which they represent here. . . . When the schoolmaster is abroad in Porto Rico and Cuba and Luzon he will speedily adopt American methods and become a teacher, not only of the elements of learning, but of the principles of liberty, of justice, and of mercy to the humblest of God's creatures which are taught in every American school. . . . We sincerely trust that, in whatever new lands the American flag may wave, it will represent not only liberty and peace to all mankind, but a larger measure of comfort and happiness to his dumb dependents than they have ever yet enjoyed under the rule of Spain."

Received.—*Knowledge*, *The Irish Naturalist* and *Humanity* for October.

NATURAL HISTORY NOTES AND QUERIES.

The Yellow-Necked Mouse (*Mus flavicollis*).—The point raised by your correspondent in this month's number of NATURE NOTES is very interesting, as it deals with a British mammal which was overlooked for a long time, and which has only within the last few years been accorded its proper place. The yellow-necked mouse (*Mus flavicollis*) was until 1894 disregarded by British naturalists, although several writers under *Mus sylvaticus* have mentioned that "a larger variety measuring four and a-half inches, exclusive of the tail, is sometimes found in woods." Mr. W. E. de Winton says, "Field mice answering the description of *flavicollis* are abundant in some of our English counties. I think this animal should find a place in the list of British mammals, and for my part I quite agree with Melchior that it is a perfectly distinct species, since, apart from its size and colour, the characters of the skull sufficiently entitle it to that rank. In comparison with *M. sylvaticus*, the general colour of the upper parts in *M. flavicollis* is brighter, especially along the sides and legs, and the under parts of almost pure white, excepting the gorget or breastplate of clear yellowish-brown (from which it takes its specific name). This band is about 8 mm. broad, passing across the chest, immediately in front of the fore legs, with a cross or longitudinal stripe in the centre extending forward about 5 mm., and back along the sternum about 10 mm., where it is entirely lost, unlike the slight daub of colour so frequently found on the chest of *M. sylvaticus*, which varies from the smallest spot on the breast to a decided yellow-brown tinge extending over the whole belly. The bright fawn-coloured band across the chest distinguishes *M. flavicollis* at all ages and in all seasons. The habits of this mouse are similar to those of *sylvaticus*, commonly known as the long-tailed field mouse; there may be slight differences, but they are not at present known. The distribution of *M. flavicollis* seems to be very local and the localities in which it occurs are widely separated. It was believed to be peculiar to Herefordshire, it being particularly abundant around Graftonsbury in that county, but it is to be found generally wherever *M. sylvaticus* is distributed. Some well-known writers on the subject give their decided opinion that *M. flavicollis* is nothing but a large variety of *M. sylvaticus*, but this point is not clear. The only mention of this mouse among British mammals in published editions of Natural History works will be found in "Allen's Natural History" and F. G. Aflalo's "Sketch of Natural History of the British Islands."

W. H. MCCORQUODALE, F.L.S.

Hedgehog.—I have seen some letters in your magazine about hedgehogs, but I have never seen this reason mentioned why keepers kill them. They are creatures very fond of warmth, and so find the nests of pheasants and partridges just such a bed as they like. One keeper tells me that he has often found them curled up in the middle of a nest with the eggs. Pheasants and partridges do not care to continue sitting on nests containing so unfavourable a subject for hatching purposes, and so poor piggy has to pay the penalty for his ingenious trick.

DOUGLAS SECRETAN.

Passerine Repentance?—Last year I related in NATURE NOTES the barefaced way in which thrushes were robbed by sparrows of the chafers they had dug up on my lawn. The thrushes have been at work this year as usual, but not once have I seen a sparrow attempt to seize their food, though it is sometimes taken from them both by blackbirds and starlings. The reason is easy to discover. Down to the time the corn began to ripen there was sufficient rain to keep the ground moist and provide an abundance of other food. I am afraid, therefore, that my rascally sparrows have not really improved in morals, but that this year they have had no necessity to be greater thieves than usual.

Market Weston, Thetford. EDMUND THOS. DAUBENY.

The Decrease of Swallows.—"Where are the swallows?" has been a frequent question this year, and I think demands more than a passing notice. The answer has been "a cold spring," "late frosts," and other similar reasons, and I see in the October issue of NATURE NOTES that the sparrows have something to do with the misfortune. But I fear the real cause is of a more permanent and deadly nature, which only came to my knowledge a fortnight ago. Hence my troubling you with this, in the hope that your Society may be able to do something to stop the murders—though indeed the hope seems small. The following is the explanation of the mystery. When a fortnight ago bemoaning the scarcity of swallows, and the plague of midges, flies, daddy-long-legs, &c., two visitors happened to hear the lament. "Oh, I can tell you why they don't come," said they. "They catch them and kill them." "Brutes!" we exclaimed. "Where?" "In Italy," said they, "by thousands. They spread high nets where they are known to pass and trap them in shoals. They are then eaten by the peasantry—who are starving and will eat anything." "But you don't mean to say they will eat swallows," we protested. "Yes, they do; they will eat anything, poor things! So would you if you were in the same state of hunger." It seemed beyond belief, but my two lady friends may be relied on; and as they had spent the spring in Italy and do not speak from hearsay, I fear the evil is too true. Of course the Bread Riots may have made the suffering worse than usual this year, but this is only a matter of degree. I am rather a horticulturist than entomologist, and know little of the species of insect that swallows delight in, but this I do know, that the celery fly has come, that the grub in apples abounds, that honey-dew smothers the beeches, and that moths and midges torment one day and night. A pair of flycatchers have for years regularly built in a creeper on the house. They, too, this year, have neglected to turn up; so altogether we are in a bad way. H. V. E.

Mile Ash, Derby.

Migration of Swallows.—A very interesting sight was witnessed by my husband and myself when walking in the neighbourhood of Frome, Somerset, on the evening of September 17, about 6.30 p.m. It was an enormous gathering of swallows, which filled the air with their cries, seemed to come from all quarters, and extended upwards as far as the eye could reach. They circled round and round, and at last dropped by thousands, like showers of autumn leaves, upon some low-growing young willow trees, close to the river Frome, and very near the Sewage Works, about half a mile from the town, where they evidently took up their quarters for the night. I have been informed that this was not the only evening on which this extraordinary sight has been witnessed. So it seems reasonable to suppose that these swallows dispersed again during the day, and that this is their place of assemblage in these enormous numbers in anticipation of their long journey to southern climes, chosen as giving both shelter and food. It certainly was a sight never to be forgotten, and reminded us rather of an infinitely extended and multiplied swarm of bees.

M. BLANCHE THOMPSON.

Cuckoo.—That the cuckoo does convey its eggs to the nests of other insectivorous birds by other means than by laying them there is, I think, now pretty well an established fact. The following case has come lately under my observation, tending to prove this.

In a cavity in an old stone bridge, having an opening just large enough to

admit a pair of water-wagtails, a pair had built their nest, in which a cuckoo managed to deposit an egg, which in due time hatched : the nest was watched, and surprise was evinced at the unremitting care of the birds, extending, too, over the time when, in the ordinary course of events, young wagtails would have flown. Then a closer examination was made, and great surprise was occasioned by finding a large brown bird apparently ready to fly, but a prisoner. Suspecting at once what the bird was, my friend offered to give it me. I persuaded him to open the entrance and let it fly, which he did, and for many days it was most amusing to see this great booby on the top rail of a gate receiving the careful attention of the two foster birds.

It is surprising with what facility a young cuckoo will shoulder out any impediment he feels in the nest, and the restlessness the youngster evinces until this is accomplished.

I once found a hedge sparrow's nest with a cuckoo's egg in it. In due time this egg was hatched, as well as three of the sparrow's. At an early age this shouldering propensity in the young cuckoo was manifested, taking, as it would, the lion's share of the food. It soon managed to throw the weaker fledglings overboard. I found one of them on the ground still alive, which I replaced, and it was surprising with what freedom the process of ejectment was accomplished. Small potatoes and pebbles were in like measure got rid of in the same matter-of-fact way.

There is a cottager living near here who is very fond of pets, who has succeeded in keeping two cuckoos for over two years, in a partly darkened cage, feeding them on mealworms, chopped meat, and the larvæ of the blow fly, which in October she bottles and keeps under ground. The male bird would give his well-known note in the spring, but both birds are very shy and show no signs of being tamed. They are, however, in excellent plumage. I have tried to persuade her to liberate them, but she would not do so.

JAS. PARTRIDGE.

A Duck with Unwebbed Feet.—In Scotland this month I was very interested in a young duckling that had feet just like a chicken. It could swim just as well and walk much faster than the others. The father and mother were just ordinary birds. The curious bird belongs to a keeper near Castle Douglas in Kirkcudbrightshire. D. SECRETAN.

Winter Migrants :—Redwings.—These have made their appearance earlier than ever I have recorded them. Several were seen and heard on the 2nd inst., on a gloriously fine, summer-like day, when larks, thrushes, chiff-chaffs and others were singing like spring, so that our weather in England could not have been the means of attraction in comparison to that of frost and snow when we see and hear them usually.

J. HIAM.

[October 22 is the date for their return given in Dr. Roberts' *Naturalists' Diary*.—ED. *N.N.*]

Partridge Carrying Young (vol. v., p. 177 ; vol. vii., p. 157).—I should like to mention an observation made to-day in corroboration of what I have said about young birds holding on by their beaks. My cat had caught a young sparrow and was playing with it on the lawn, as is customary with the feline tribe before devouring their prey. I noticed that during this the bird laid hold by its beak to the fur under the cat's chin, so that the cat rolled over several times without the bird being dislodged, and at last the cat had to tear the bird off with its paws.

Tuckton, Christchurch, Hants. GILES A. DAUBENY.

Wasps.—I see that Mr. J. Hiam advocates a wholesale crusade against wasps. They certainly have been numerous this year ; but is he quite sure that they are an unmitigated nuisance? As an old entomologist I am not ; for I believe that if they were to become a rarity we should soon find out their absence by a double dose of caterpillar and grub. The amount of insect food consumed by wasps is enormous, and they principally live on this before the fruit season comes on. How often have I seen them devour caterpillars and flies? I have known grocers say they welcome wasps in their shops, as they devour so many of the flies that eat their sugar. There has been an unusual amount of insect pests

this year, as the dilapidated state of our apple and other fruit trees testifies. If next year there is a comparative dearth of them, as is quite possible, may we not thank the wasp for a share in the good work of killing them down? I am not one of those lovers of nature who would leave all animals alone, and let them size themselves; but from long observation have learned to see good in many creatures which most persons condemn without a trial; and I should like some naturalist of weight to give us the *pros* and *cons* about wasps. I quite agree in thinking with Mr. Hiam that bullfinches are destructive birds, and admire his pluck in telling Selbornians that he often kills them.

Market Weston, Thetford. EDMUND THOS. DAUBENY.

SELBORNE SOCIETY NOTICES.

The Special General Meeting to consider the proposal to increase the amount of the Branch subscriptions from 10 per cent. of the gross receipts to 20 per cent. of all subscriptions over 5s. was held, as advertised, on October 18, at the Society's Rooms. The subject was thoroughly discussed, and communications were read from the various Branches bearing upon it. It was finally decided that the benefit which the Society would gain, were the proposal carried into effect, would be so small as not to be worth prosecuting at the time, especially in view of the decided opposition of some of the working Branches. The proposition was therefore withdrawn. At the same time a hope was expressed that, as far as possible, Branches would remit something more than the bare 10 per cent.

Donation towards Reduction of the Deficit.—The Council acknowledge with thanks the receipt of the following donation: F. W. A., £1 1s.

Additions to the Selborne Library.—The Librarian reports that the following books have been received from the Editor, and are hereby acknowledged with thanks: "Skertchly's Geology," 9th edition; revised by Jas. Monckman, D.Sc.Lond. "The Flora of the County Donegal," by Henry C. Hart, B.A., F.L.S.; also from the author, "Crowborough Hill," by C. Leeson Prince, M.D.

Field Club.—The very interesting historical account of Cheshunt, given by Mr. Gerish at the meeting of the Field Club, on October 1, is printed *in extenso* in the *Hoddesdon Observer* for October 7.

Council and Committee Meetings.—The next meetings of the Council will be held on Tuesdays, November 1, and December 6, at 5.30; and of the Magazine and Leaflet Committee on Tuesdays, November 15 and December 20, at 5.30.

Selborne Society Badges:—The attention of members is called to the recognised badge of the Society, which was designed by Mr. John Fullwood, and can be had of the Secretary, as follows. Prices: Brooch, 3s.; solitaire, 1s. 9d.; pin, 1s. 6d.; pendant, 1s. 6d. They are tastefully designed in pale blue and

silver, the outlines being as shown in the accompanying illustration. Councillor's badges have a crimson centre. They are especially useful as a means of identification between Selbornians at branch meetings, or at country Field Club Rambles.

NEWS FROM THE BRANCHES.

Bath.—The Report of this Branch for the year ending May, 1898, shows a membership of 347, an increase of 28 in the year; seven excursions held, six lectures given, besides the annual Conversazione, and a balance of over £40. Mr. M. H. Scott, of 5, Lansdown Place West, has become secretary; Mrs. Wheatcroft retaining only the management of the excursions.

New Forest.—Miss C. Agnes Rooper, of Pen Selwood, Gervis Road, Bournemouth, has accepted the Hon. Secretaryship of the New Forest Branch, and all communications relating thereto may now be addressed to her at her address.

Northern Heights.—The Council has pleasure in welcoming H. B. Wills, Esq., as the new representative of this Branch.

Richard Jefferies (Worthing).—Mrs. George Butt, of Wilbury, Littlehampton, has accepted the Hon. Secretaryship of this Branch, and communications may now be addressed to her at that address.

Croydon and Norwood.—On September 20 an address was given by Mr. E. A. Martin to the Sunbeam Band of Mercy, Thornton Heath, on "Ants and Spiders," lantern slides being kindly lent by the Humanitarian League.

ANSWERS TO CORRESPONDENTS.

Mrs. Randlos.—*Full Revelations of a Professsonal Ratcatcher*, published by the Author, Ike Mathews, Ratcatcher, Pendleton, Manchester, post free, 1s. 1d.

Mrs. Turle.—*Cornus sanguinea.*

Chilworth.—*Polygonum cuspidatum.*

F.C.M.—The conifer is *Cupressus Lawsoniana;* the material in the other cases was insufficient.

Mrs. Meade Waldo.—A person ignorant of botany would certainly find it very difficult to arrange the flora of Santa Fé. *Outlines of Botany*, by George Bentham (Lovell Reeve, 2s. 6d.), would be perhaps the most useful introductory book. There is no handbook or complete flora of the district; but the following afford material for one:—P. G. Lorentz, *Vegetations-Verhältniss der Argentinischen Republik*, Buenos Aires, 1876, 8vo., and *La Végétation del Nordeste de la prov. de Entre Rios*, Buenos Aires, 1878, 8vo.; O. Schnydner, *Contributions à la flore argentine*, Genève, 1877, 8vo.; A. Grisebach, *Plantæ Lorentzianæ*, Göttingen, 1874, 4to., and *Symbolæ ad Floram Argentinam*, Göttingen, 1879, 4to., which are in German and Latin and only partly descriptive; and J. Hieronymus, *Plantæ Diaphoricæ Floræ Argentinæ*, Buenos Ayres, 1882, 8vo., in Spanish, dealing mainly with medicinal plants.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 34, Argyll Mansions, Addison Bridge, London, W.; letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 108. DECEMBER, 1898. Vol. IX.

SELBORNIANA.

Financial Position of the Society.—We are sorry to have to announce that the members have as yet made scarcely any response to the appeal addressed to them in our two latest numbers; so that the Society is still hampered by want of funds. We can, however, call attention to the action of the Farnham Branch as announced on a later page, and we have received the following letter from one correspondent :—"With regard to the financial statement appearing in the November issue, I propose to double the amount of my usual subscription due in January next, and venture to suggest that if each member would adopt this course, it would go far to rectify the adverse balance of £92 19s.—W."

Barbarity at the Crystal Palace.—We have received the following letter from Mr. H. R. Fillmer, Hon. Secretary of the Foreign Bird Exhibitors' League :—

"In reference to your remarks in Nature Notes for November, under the above heading, will you allow me to point out :—

"(1) That the recent Crystal Palace Show was organised by two Societies, each of which had exclusive management of its own section, and that the Foreign Bird Exhibitors' League had nothing whatever to do with the British birds at the Show.

"(2) That the three judges named by you were judges in the foreign section, and had no more to do with the British birds than you had. I believe that none of them are members of the National British Bird and Mule Club, which was alone responsible for the British section.

"(3) That the exhibitors, and not the managers of the Show, provide the cages, and that the Committee have no power in the matter.

"(4) I strongly disapprove of the caging of swallows and woodpeckers, and consider that the former, at any rate, ought to be excluded from competition at shows. I believe that all three of the gentlemen named by you share this view, and two of them have written in the *Avicultural Magazine* protesting against the caging and exhibition of swallows. With regard, however, to nightingales and wagtails, they speedily become reconciled to captivity, and appear to be as happy therein as a canary; and there seems to be no reason why they should not be shown, of course in proper cages.

"I consider your attempt to saddle three highly-respected aviculturists, with responsibility for an alleged 'barbarity,' over which they had no control, to be, to say the least, hasty and ill-advised, and calculated to injure the cause which we all have at heart.

"If such attacks are to be repeated, I, and a good many more, will withdraw our support from the Selborne Society."

In reply to this letter we immediately apologised for having blamed the wrong persons, having seen only one list of judges. At the same time we pointed out to Mr. Fillmer that it is assuredly within the power of any committee to make a rule as to the size of cages. To this we are glad to say he replies:—"I have never known of a Bird Show held under rules which provided for the disqualification of exhibits sent in improper cages. I agree with you that some such rule might with advantage be adopted, and will some day suggest it—though I see many difficulties. But you can hardly blame a committee for not adopting a rule which, so far as I am aware, has never until now been even proposed."

Mr. Long's Dogs Bill.—We have received from Captain F. E. Pirkis a letter of protest as to the absence of veterinary experts from the inspecting staff of the Board of Agriculture—a matter to which the attention of one recently constituted protective parliamentary committee may well be directed.

The Elephant.—A Frenchman, M. Bourdarie by name, is agitating just now in the interests of the elephant. He is appealing to the French Government and the King of the Belgians for support. Every year 40,000 elephants are killed in Africa for the sake of their ivory, and M. Bourdarie fears that, like the buffaloes in America, these useful animals will become exterminated if something is not done to limit the number killed. He considers that the elephant, instead of being destroyed, should be protected to serve the future agriculturists of Central Africa, as the elephant is the only animal that can work in these regions. In the meantime ivory is still an important article of commerce in Central Africa, and the problem is how to get the ivory without killing the elephant.—*Daily Chronicle.*

Future Arrangements.—We are glad to be able to announce that in our next number we shall begin a series of papers by the Rev. Professor G. Henslow, M.A., F.R.S., on "Observations for Young Botanists."

ROOKS.

By the late Prebendary Gordon (written in 1881).

"AUTUMN with the sound of rooks," says the Poet Laureate; and the observation is just. The only birds that seem to penetrate the leaden November mist for the purpose of traffic, and are not afraid of patrolling a long distance day after day, are the patient, laborious, black policemen of the air, who, as food fails them inland, at this time of the year make excursions to the sea, and work away on the shore in the yielding ooze, often seeming to be so tired on the return journey that they can scarcely, after many halts, top the last hill and drop into the rookery trees.

Last Monday, November 7, at 4.30, I saw near Pyle Station, South Glamorganshire, a very large camp of rooks, evidently at their first halt about a mile from the sand on a green knoll, receiving stragglers. About three acres of ground was black with them and lively enough; and they appeared to be sorting themselves with military precision (the "*corvorum exercitus*" of Virgil) into two grand squadrons, one for Margam on the west, and the other for Tythegston on the north-east, each about four miles distant. They were all resting, crops full, and body tired: "fortune could not hurt them, for they had dined."

Not long ago I was on some high ground of the South Downs, about eighteen miles north of Portsmouth, a little later in the day. The light was just failing when a single rook settled in a tree near me. A mist came on and I could hardly see, but I heard him calling at intervals. In a short time an enormous flight of rooks threaded its way up the defiles, and like a swarm of black bees covered the tree on which the solitary bird had settled, and two more. They were coming as thick as the Greek phalanx from the sea shore; and I could hear them in the dusk *cawing the way* up the staircase of the hills to the remaining squadron advancing from the sea: they were hunting together by sound, like foxhounds in a thick covert. After a brief halt, when the whole line had formed at the halting place, the last "forward march!" signal was given and the "Black Watch," each member of which was a bandsman, was soon at home quarters in the woods of the demesne (Uppark), about a mile off. By this time it was quite dark.

If rooks are like soldiers in their field evolutions they are sometimes at home model policemen. The ordinary rook has

in his way as great a love of theft as the jackdaw. At the time of nesting it is not unusual to see a division of labour, one of the pair standing guard over the work and protecting it from thieves, from the time that the lowest bars of sticks (often from old nests broken up) are crossed to the time when the "procreant cradle" is complete. Were it not for the policeman so watching the work incessantly, no rook-building would be sacred, and impudent thieves abounding in the neighbouring city of rooks would carry away and appropriate their neighbours' house for mere love of mischief and plunder.

AN OLD-WORLD BOTANIST.

IT is always interesting to light upon some old work of science published a century or two ago, at a time when the epoch-making work of more modern discovery was as yet undone. Scanning the pages of such a work we realise that men now live in another world of ideas altogether from that inhabited by our author, and there is a real antiquarian interest in marking the crude hypotheses and tentative interpretations of infant science. But if, besides, we can find one or two suggestions which have long afterwards been at last verified (independently or not) and adopted into the commonplaces of science; or if again we can see how very near our old-world* author was to the track of some discovery, which yet he missed; then our interest is doubled and no longer merely antiquarian. These considerations have suggested to me that a brief notice of the views held by an old English botanist (in common, no doubt, with many of his contemporaries) might prove not uninteresting; and the more so since this author is not even mentioned by Prof. Vines in the terribly extensive bibliography of his "Physiology of Plants."

Philip Miller was "gardener to the Worshipful Company of Apothecaries at their Botanical Garden at Chelsea, and F.R.S." In 1733 he published the second edition of his "Gardener's Dictionary," as a thick folio volume; and it is a significant comment on the copyright legislation of that day, that there is prefixed to the volume a Royal Licence granting to the author —for fourteen years—the sole right of printing his own book! This dictionary is, in the main, an account (alphabetically arranged) of all the cultivated plants then known in England, with directions for their treatment, and diagnoses of the genera, besides a general account of all relevant scientific terms.

With these matters, however, we have no concern here; for

* In science, and emphatically in botanical science, an author of 150 years back may certainly be called "old-world."

my intention is simply to summarise briefly the account which our author gives of the *sap* of plants, a subject to which he devotes six of his folio pages.

He commences by noting the usual arguments for the circulation of the sap, such as that, by ligaturing the stem, the part above is found to swell considerably; and in this connection it must be remembered that the botanists of that age were handicapped by the notion that, even in detail, the organisation of the plant must be similar to that of the animal, both morphologically and physiologically. After noticing "the excellent Bobart's" contention that plants contain two juices, one imbibed by the roots, and one by the extremities of the branches from the air, our author proceeds to define the sap as a juice "furnished by the earth and changed into the plant," and remarks that this juice, "when it enters the roots—the bark whereof is furnished with excretory vessels fitted to discharge the excrementitious parts—is earthy, watery, poor, *acid*, and scarcely oleaginous at all." I have italicised this word *acid*, since I shall have occasion to comment thereon anon. In a very curious paragraph, on the ascent of the sap and its continual modification *en route*, he traces it through the flower (to whose petals he erroneously ascribes a digestion and alteration of the sap) to the stamens; "these communicate it to the dust in the apices which is, as it were, the male seed of the plant, where, having undergone a farther maturation, it is shed into the pistil, which performs the office of an uterus; and thus having acquired its last perfection it gives rise to a new plant." It would appear doubtful from this whether our author recognised the existence of any female element at all, although he recognises both male and female organs; but one can hardly wonder at such omission, considering at how comparatively recent a period the true process of fertilisation in even animals has been understood. Still to us it sounds sufficiently strange to find the "sap," transformed into pollen and then into embryo, and never a suspicion of any such factor as protoplasm! We are next told that "the motion of the juices in vegetables is produced, much like that of the blood in animals, by the action of the air,"—a discovery referred to the "admirable Malpighi:" for it seems that there are two orders of vessels in plants (1) such as convey the juices, and (2) air-vessels within which air is continually inspired and expired; and it is explained that by the expansion and contraction of these vessels, according to temperature, the juices in the other vessels are set in motion. Readers will do well to compare with this interpretation the modern theories of the effects of root-pressure, and of transpiration, upon the ascent of the sap.* Miller then traces the sap up to the branches, and asserts that, "having everywhere deposited some-

* See Vines' "Physiology of Plants," and F. Darwin's British Association address as reported in *Nature*, vol. lvi., p. 367 *et seq.*

thing for aliment or defence, what is redundant passes out into the bark, so to the root, and thence to the earth again, and thus a circulation is effected."

It is interesting to note here what modern science has substantiated, and what rejected; there is, of course, an upward current of sap from the roots, and there is a grand assimilation and synthesising of organic compounds going on in the leaves and other green parts; and there is a descending current—but this is of assimilated products, and therefore not the waste sap of Miller, but a rich nutritive sap; and finally, of course, the notion of excretion of waste products through the roots is simply an error derived from the attempt to press analogies to animal organisation. As a matter of fact, the waste substances are deposited in the bark, in laticiferous vessels, in falling leaves, and so on.

Then follows an extremely interesting passage: for, regarding the course of the sap, Miller adverts to the opinion that it descends by the larger fibres in the bark, placed immediately over the wood; "in which descent the sap, now sufficiently prepared, adds a part of its substance to the contiguous wood and thus *increases by apposition*." Now considering the controversy of modern times as to whether growth takes place by intussusception or by apposition, and the strong evidence adduced for the existence of the latter process after Nägeli had established intussusception as the mode of growth, it is, I think, very interesting indeed to find this old botanist quietly assuming apposition as the mode of increase—a view to which modern botany has in great measure returned. Of course it is very possible that Miller's views of growth by *apposition* were exceedingly crude and vague, and that he understood thereby something far grosser than do we—but, on the lowest ground, it is interesting to find this most modern watchword of botanical controversy cropping up in a work one hundred and fifty years old.

The unimportance and gradual disappearance of the pith is correctly explained; and then we are treated to Dr. Boerhaave's division of plant-juices into six classes. The first class, it seems, comprehends the crude nutritious juices of the root and stem, which are a "sub-acid watery lymph," and for examples we are referred to the juices which issue from wounds made in the woody parts of plants, as, *e.g.*, the "tart liquor issuing from the root of the walnut-tree when cut off in May"; and we are presently told, too, that such juices may be esteemed "as yet fossil, being generated of, and in, the earth." Here, now, I must take the opportunity of drawing attention to later work, which shows how investigators may be on the verge of a discovery, which yet is deferred for more than a century. Readers of Professor Vines' "Physiology" will remember the important chapter in which he explains the solution of the food-matters in the soil by the erosive action of *an acid cell-sap excreted* by the roots: experiments of Sachs and others are quoted, but the discussion

is tantalisingly brief, and no data are given as to the amount of acidity present in the roots. How vitally important such considerations are, both to the purely scientific interest of the botanical physiologist, and also to the practical needs of the scientific agriculturist, may be seen by any one who cares to turn to the memoir, published a few years since, by Dr. Bernard Dyer.*

Following up the clues afforded by the famous Rothamsted experiments, which showed that, although there might be an enormous amount of (*e.g.*) phosphates in a given soil, yet so little was assimilable, that a slight dressing of "superphosphates" greatly increased the crop; following up also a suggestion of Stutzer's; Dyer has shown, firstly, by a very large number of determinations, that the root-sap contains an acidity equivalent to about 1 per cent. of citric acid; and, secondly, that a soil extracted with a 1 per cent. citric acid solution yields to the solution exactly so much phosphoric acid as corresponds with that found at Rothamsted to be taken up by the plants: in other words, the available phosphoric acid in a given soil—the amount that can be absorbed by a plant's roots—is exactly that amount dissolved by a 1 per cent. citric acid solution. How great an importance this acidity of the root-sap now assumes it is needless to point out; but let us return to Miller and see how far he had gone. He knew that the sap was acid, and more acid the nearer to the root; he knew that, in *e.g.* the walnut, a "tart" juice was exuded if the root were cut; and he supposed that there was a constant "excretion" from the root. It only needed one step further to anticipate the discoveries of over a century later, and to perceive in this acid root-sap a solvent of the soil-food; but from this discovery Miller was barred—apparently by his obstinate notion that the acidity of the sap was a factor of its "fossil" or mineral nature, and that an acid sap was imbibed from the earth.

But to proceed: having disposed of the first class of juices he passes on to the second, viz., that of the leaves (which, as he rightly remarks, are the real lungs of the plant), of which juices he distinguishes three kinds, viz., (1) the nutritious, oily, and saccharine, juice of the leaves; (2) wax; (3) manna.

The third class of juices is that of the flowers, which juices are subdivided into three classes also—(1) a volatile oil in which the odour resides; (2) an inodorous juice expressed from the flower; (3) honey.

The fourth class of juices are those of the fruit and seed, and the fifth class those of the bark.† After this account the reader will probably feel that, however much the "learned Dr. Boerhaave" may have edified the botanists of his own day, we of to-day are not greatly assisted by his classification of "juices."

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* See "Recent Work on Soil Analysis," in *Natural Science*, May, 1896, for a summary, by the present writer of this work.

† Which are subdivided into eight divisions, including gum, rosin, pitchy juice, &c.

Then follows the quaint remark, which is indeed a key to the whole of the author's views, "that botanists are now generally agreed that all plants are furnished with organs and parts necessary both for chylification and sanguification; that they have both veins, arteries, heart, lungs, adipose, cellules, &c. If so it is obvious that there must be some difference between the juices which have not undergone the action of those parts, and such as have already circulated a number of times." The analogies, or rather homologies, between animals and plants, as regards their ultimate histological structure, and as regards their fundamental physiological functions, are essential; and their successive recognitions are milestones in the progress of science; but it is well to observe the mystification that may be caused when we endeavour to seek for homologies in adaptive details.

Miller returns to the subject of the circulation of the sap; and, as a supposed proof of such circulation, we have an interesting experiment recorded, the exact significance of which is not quite clear, but the phenomenon would seem to be closely related to those with which Darwin has made us so well acquainted in the famous instances of *graft-hybrids;* and these old experiments are the more interesting since they seem to have a bearing upon the issues opened up by Weismann's "Essays." We are told then that Mr. Fairchild budded the shoot of a yellow-spotted passion-tree into a plain-leafed variety, and that the bud did not take, yet "after it had been budded a fortnight the yellow spots began to show themselves about three feet above the inoculation, and in a little time after that the yellow spots appeared on a shoot which came *out of the ground from another part of the plant.*"

It would appear that this phenomenon—assuming it to be accurately reported—is fundamentally an expression of the same biological character that we find manifested in graft-hybrids, and also in the leaves of Begonia. Several other interesting experiments are recorded, as, for instance, the grafting of the evergreen oak upon the common oak, and of the (evergreen) cedar upon the larch, in both of which cases we are told that, while the leaves of the stock fell in the autumn, those of the graft remained as usual—an observation which seems to me extremely interesting, as showing how the variant inherited characters of two species persist under almost identical conditions of environment.

We are further assured that this same experimenter exhibited before the Royal Society "a *viburnum* with its top planted in the ground, which was become roots, and the roots turned up, which were become branches." I confess that this would have struck me as suspiciously like a Transatlantic narrative, were it not for the recent experiments by which Rastowzen and others have shown that branches may be converted into roots, both physiologically and morphologically.

As to the inverse operation, which is also now known to be possible, Miller's account is not sufficiently full for us to judge whether shoots were thrown up from the roots, or whether actual transformation of roots occurred.

A farther very interesting experiment is added, in which a pear-tree was inarched upon two pear-stocks, but having its roots out of the ground, which "was in a good flourishing state with a branch in blossom, that received no nourishment but by the juices that return down the other two branches, which, though it had been done two years, yet it continued shooting suckers out of the root, which is esteemed as a proof that the branches are as useful to support the roots as the roots the branches."

All these foregoing experiments are quoted as proofs of the circulation of the sap, and Miller then proceeds to summarise Hales' arguments against "the notion of the circulation of the sap in trees like to that in animal bodies;" but, since all these are contained in so well-known a work as Hales' "Vegetable Statics," it is unnecessary to trespass upon the Editor's space by recounting them, my object being simply to give my readers some account of the views upon the sap of plants advanced by an author who appears to have been overlooked so far as his physiological work is concerned: and I can only hope that my readers may find this summary as interesting as I found the original.

F. H. PERRY-COSTE.

LIGHTNING.

AS probably many readers of NATURE NOTES have never *seen* a tree struck by lightning, a note on this subject may be useful. If one were to judge by what is seen in pictures, it would appear that the tree is struck in a slanting direction about one-third of the way down, the head breaks off and crashes to the ground. This, however, is not what I have seen in nature. About thirty years ago, when staying at my father's country house in Somersetshire, one morning whilst I was dressing I paused to look at a violent thunderstorm that was raging, and whilst doing so I saw a flash of lightning strike straight down on a large elm tree that stood by itself in a grass field about 250 yards in front of me. Directly after breakfast I walked straight up to the tree to see what damage had been done; the tree stood erect in the apparent enjoyment of the fulness of life, but there was from the top to the bottom of the tree a deep rent through the bark, as if it had been cut with a large jagged knife; at the foot of the tree the electric fluid had separated into some four or five branches furrowing the ground for a few feet. I watched this tree in after years, and found it gradually wasting away, and it was, I think, cut down in my father's time; if not, I shall see it when next that way, and will report its condition in these columns.

The above circumstance came to my memory yesterday when I was driving in the New Forest and saw a large beech tree that had quite lately proved a conductor to earth for the electricity in the clouds above it.

On another occasion, in 1892 or 1893, when I was living at Cassel, in Germany, I saw the lightning strike straight down on the Kratzenberg, a wooded hill laid out as a pleasure ground, and about a quarter of a mile from my house. I at first thought that the ornamental summer-house had been hit, but a short search revealed the victim—a tall pine surrounded by others, whose bark had been rent from top to bottom, and some of the descending branches damaged and slightly broken at the ends by a portion of the electric current being diverted along them. This tree never looked quite well during the remainder of my stay in its neighbourhood, and no doubt the Germans, who are such excellent foresters, have long ere this removed it.

Inasmuch as the living body of an animal is a better conductor of electricity than that of a tree, I imagine that if a man had been leaning against one of the above-named trees he would certainly have been killed. Had he been underneath one of them he would have been in very great danger. Had he been not far from the pine tree, but well beyond the branches, he might have had a shock but have escaped with his life; but had he been touching one of its branches or been close to them he would have caused a sufficient portion of the electric fluid to be drawn towards him to have perhaps a fatal result.

Had there been squirrels or birds in the pine some might have escaped, but many of the insects located in the bark and elsewhere, I think, would have been destroyed. It did not occur to me at the time to pursue my investigations so as to determine this point.

Tuckton, Christchurch, Hants., GILES A. DAUBENY.
October 2, 1898.

GEOLOGY FOR CYCLISTS.

CYCLISTS have undoubtedly great opportunities for studying field geology; but to reap the full advantage of these opportunities some preliminary acquaintance with the science, such as can be obtained from Sir Archibald Geikie's "Class-book," or some other of the many excellent elementary works now published, is necessary. A geological map of the whole of England, such as the late Sir Andrew Ramsay's, or the handy little geological atlas published by Reynolds, is indispensable, and I should advise anyone wishing to become a geologist to join the Geologists' Association, a body which has long been famous for its admirably conducted excursions, some of which are now specially planned for cyclists.

England presents a remarkably complete series of stratified

rocks, the Primary or Palæozoic, Secondary, and Tertiary groups being exposed at the surface in ascending order as we traverse the country from west to east. These rocks have been sculptured by various physical forces into valleys and dales, the higher ground, *i.e.*, that less worn, remaining as plateaux and hills; and the general result is that great diversity of scenery which every cyclist admires, but which he should study in connection with the causes which have produced it. Of these the chief have been marine action around the coast, and river action, together with rain and chemical disintegration, on the land. Ice action also has been a fruitful source of certain phenomena well seen in such mountain districts as Snowdonia and Cumberland. The town of Penmaenmawr, for instance, stands on the ancient terminal moraines of glaciers which came down from the Welsh hills and floated away as icebergs to the north; whilst on the other side of the country also are the proofs of sub-marine ice-action, the heaps of stones by the roadside, all over Suffolk, which are collected off the fields for mending the roads, being good epitomes of most, if not all, the strata in England, fragments having been brought by ice from the north-east and left at the bottom of the sea during the great "Glacial Epoch."

Another class of phenomena are the results of igneous action, of which England and Scotland, especially in the west, afford abundant illustrations. Thus the two hills Penmaenmawr and Penmaenbach are masses of volcanic lava poured out in early geological periods, and the gigantic basaltic pillars of the Giant's Causeway and Staffa are some of the last results of the great volcanic outbursts which took place all along the western coast of Scotland in the early part of the Tertiary period, and of which Iceland is the last survival, its volcanoes being, perhaps even now the safety-valves of the British Isles.

The study of these physical phenomena, which are to a large extent still in progress, and which in times past have brought about the existing features of our island, is now called Physiography. It embraces what Sir Charles Lyell called the Principles of Geology, a title which he gave to a work which every cyclist who wishes to understand geology should study. As a preliminary, however, he should read Huxley's "Physiography," and he might also study the geologically coloured map of the environs of London published by Stanford, which exhibits all the superficial physical features. This will prepare him for the more solid information contained in Sir Charles Lyell's work.

The most interesting feature in the study of geology, however, is, perhaps, the evolution of life. Commencing with the Cambrian, Ordovian and Silurian strata of Wales, we find the animal life of those periods all but entirely confined to invertebrates, and although shells and crustaceans attained to enormous dimensions, as in the nautilus family and the king-crabs, mere bulk is not necessarily a proof of high organisation. The gigantic king-crabs of the Silurian, for instance, were lowly

organised. Fish or vertebrate life first put in an appearance (as far as we know) just before the next or Devonian strata were deposited. In these beds, however, and in the following, or Carboniferous, series, they attained to a great profusion, and some were of gigantic size; but they all more or less retained a primitive structure in having "heterocercal" tails, *i.e.*, with the lobes unequal, a feature which the salmon only possesses during its infancy. Others were even simpler still, the backbones in almost all cases consisting of the embryonic gelatinous "notochord." The Carboniferous epoch saw an enormous development of the lower orders of plants, to which we owe our coal; and at this and the following, or Permian period, the next step in animal life was reached, viz., the Amphibia. These amphibians, however, were all "perenni-branchiates," *i.e.*, they retained their gills throughout their life, never reaching the stage of the modern frog, which loses its gills entirely and substitutes lungs. This higher group of Amphibia did not appear till a much later epoch.

Passing on to the Secondary epoch we find the reptiles culminate in both size and number, many being marine, many others terrestrial, and others adapted for flying. One marine reptile only, the *Amblyrhynchus* of the Galapagos Islands, now remains to represent this lost ancestry. Certain types of terrestrial reptiles attained sizes even more enormous than their aquatic kinsfolk, and it would seem to be from some branch of this group that birds originated, since the earliest known bird occurs at this epoch and has some thoroughly reptilian features, such as teeth in the jaws and a long tail with the feathers arranged in two rows to the end of it, and not upon a "ploughshare" bone, as in modern birds.

At this Secondary epoch, too, molluscan life assumed new forms. Though the genus *Nautilus* survives even now, the great family of *Nautilidæ* had largely disappeared, and in their place the family *Ammonitidæ*, which has now entirely vanished, rose to its climax in numbers and variety. Fishes of one order of the shark family, the *Cestracionidæ*, now represented only by the Port Jackson shark, were then particularly numerous, and the earliest representatives of the great bulk of modern fishes with equal-lobed tails in the adult stage, such as our salmon, herring and carp, appear in the early strata of this epoch. Their evolution is attained by the stronger development of the "hypural" bones, or bones below the tip of the tail, so that, while the line of vertebræ is continued into the upper lobe, these hypural bones form the lower lobe. The first traces of Mammalia also, minute rat-kangaroos, occur in the Secondary period; but no group other than the Marsupials has as yet been met with.

Passing on to the last, or Tertiary epoch, we find an enormous influx of mammalian life to be the characteristic feature of that age. Here again, and perhaps more perfectly than elsewhere, is the great doctrine of evolution displayed, since the earlier

types were much simpler and yet more comprehensive, in that they combined characters which in later ages became differentiated so as to occur in distinct animals. Thus *Ictitherium* combined features peculiar to the living hyæna and civet, and *Hyænarctos*, those of the hyæna and bear. In the case of several genera, almost perfect genealogies have been drawn up. The horse, for instance, is known only in the more modern deposits, but its five-toed ancestors existed in the earliest Tertiary strata. By gradually losing first one and then another toe, the foot has been reduced to one, the single hoof of each foot being the middle or second finger, while corresponding changes occurred in the structure of other bones and of the teeth.

The whole geological series closes with Man. In thus sketching the history of life in the past history of the world, three features stand out prominently: first, that the progression has been always steadily from lower to higher types; secondly, the earlier forms of life were "embryonic" in character when adult, *i.e.*, the full-grown animals presented characters now found only in the transient stages of higher types; thirdly, there is the survival of a few ancient forms now isolated and without living kin, such as *Nautilus*, *Lingula*, *Trigonia*, the Port Jackson shark, and the mudfish, among animals, and the Horsetails (*Equisetum*), and Club-mosses (*Lycopodium*), among plants. The two principles, therefore, to be deduced from the study of the biology of the past are *evolution* and *persistence of type*, not without, in some cases, *degradation* as well.

There are many convenient centres from which the cyclist can make tours to examine the quarries and other places of geological interest. Thus at Ludlow he can search for fossils in the Silurian, or round Plymouth for the corals characteristic of the Devonian. At Buxton the Carboniferous Limestone can be studied, and the formation of caves by subterranean river action; from Scarborough many interesting excursions can be made, such as to Whitby for the Lias with its ammonites, to Malton for a magnificent coral reef, or to Flamborough Head for red chalk; from Cheltenham the Inferior Oolite of Leckhampton Hill, and the Liassic Marlstone of the Severn valley can be examined; and from Ipswich the Pliocene Red and White Crags of Ramsholt, Felixstowe, Walton-on-the-Naze, and Trimley.

If a cyclist will first make some preliminary study of the subject, and "read up" the geology of the district he purposes visiting, for which purpose he will find Mr. Harrison's "Geology of the Counties of England," published by Kelly and Co., of great assistance, he will not only find the scenery an object of attraction, but every valley and hill will be endowed with a new interest, and the embedded life will reveal a new world to him; and while thus widening his view of Creation to an indefinite extent, he will discover a reaction taking place in his own mind, which will become filled with admiration, if not with awe, at the mighty Power which exists behind and above the works of Nature.

G. Henslow.

REVIEWS AND EXCHANGES.

Riviera Nature Notes: a Popular Account of the more striking Plants and Animals of the Riviera and the Maritime Alps. Manchester: The Labour Press, Limited, 8vo, pp. xx. and 373. Illustrated. Price 6s. 6d.

We have not been localised like the Parish Magazine; but we were naturally interested beforehand in a work which has paid us the compliment of adapting our title. On reading "Riviera Nature Notes," however, we soon found ourselves deeply interested in the book for its own sake. The author is evidently a man of education and of wide sympathies, who knows his ground and its plants well, and has plenty to tell about them and about many of the animal inhabitants of the district also, both large and small. Many of the chapters are devoted to individual plants or groups of animals, such as the Great Reed (*Arundo Donax*), the carob, the olive, green frogs, mosquitos, the date palm, the tarantula, armed plants, climbing plants, &c., and though such topics irresistibly tempt a well-grounded botanist like the author to indulge in occasional "Kernerisms," these are by no means exceptionally wild. We think that the writer would have done well to resist the etymological temptation to connect Semitic and Aryan roots. We all know the word *can* in connection with water, and no doubt it is tempting to connect Cana of Galilee with Cannæ and Cannes, as reedy places, with *canna*, a reed, and a hypothetical primitive root *can*, meaning water; but it is a temptation. The following is perhaps safer:—"'Broom' in English means both the Genista and the bunch of its twigs which we use for sweeping. The Kymric 'bala' has the same double meaning, and I believe that Lake Bala, in North Wales, is so called from the Genista growing round its shores. From 'bala' is derived the French word 'balai.'" There are numerous side-lights on the plants of the Bible, so many of which occur also on the Riviera, and we had marked many passages for quotation, such as the humorous description of the mosquito as a test of character; but even if our space—or rather, want of it—did not prevent our transcribing them, where all is so good selection would be difficult. Dr. W. Allen Sturge adds an interesting chapter on "Prehistoric Man on the Riviera," and there is a list of the butterflies and hawk- and burnet-moths. Commendatore Hanbury, to whom the work is dedicated, adds a few notes, and there is a fairly complete index. Printing and binding are alike excellent, though *diœcious* and *monœcious* occur several times; but we think the illustrations hardly worthy of so excellent a work. Those who have visited, or are about to visit, this sunny south, whether scientific or not, will do well to add this work to their libraries.

Four-footed Americans and their Kin. By Mabel Osgood Wright, edited by Frank M. Chapman. Illustrated by Ernest Seton Thompson. New York: The Macmillan Company, 8vo, pp. 432. Price 7s. 6d.

This is a popular guide to a knowledge of North American quadrupeds intended mainly for children and thrown into the form of a story; but the execution of the work is none the less thoroughly scientific. "The Animal Tree" is carefully explained, and a picture is given of its "Vertebrate Branches" and of the "North American Mammal Tree," whilst, in addition to an index of English names, a "ladder" is also provided for climbing the latter tree, in which all the scientific names of families and species, and the sizes of the various animals, are given. There are about fifty excellent whole-page illustrations, so that we consider the book a decidedly cheap one. Many on this side of the Atlantic will be glad of the opportunity Mr. Thompson gives them of becoming better acquainted with the appearance of the woodchuck, the jack rabbit, the prairie dog, and the gopher, for instance, with the names of which they may long have been familiar in the pages of American authors.

The Structure and Classification of Birds. By Frank E. Beddard, M.A., F.R.S., Prosector and Vice-Secretary of the Zoological Society. Longmans, 8vo, pp. xx. and 548. With 252 illustrations. Price 21s. net.

This is undoubtedly the most important work that the author, one of our chief living zoologists, has yet given us. He has from his position exceptional

opportunities, and may be said to have inherited this undertaking from his two predecessors, Professor Garrod and Mr. W. A. Forbes, whose premature deaths were such a loss to science; but, though using their notes, he has added so large an amount of original matter as to make a most valuable contribution to our knowledge of the comparative anatomy of the different orders of birds. The book is in no sense a "popular" treatise or one suited to beginners, so that it in no way supersedes Mr. Headley's "Structure and Life of Birds"; but to such a position it makes no claim. We confess, however, to some disappointment at the absence of any clear statement by the author of the scheme of classification which he intends to adopt. The table of contents (pp. x., xi.) is misleading rather than otherwise, Ornithuræ, Anomalogonatæ and Passeres being printed as if all of equal grade, and no indication being given as to where the Anomalogonatæ terminate. All naturalists will be interested in the opinions of a specialist such as Mr. Beddard on the affinities of birds as a whole. "As to the likeness with amphibians," he says (pp. 153-4) "it is possible that the divergence of birds from the reptilian stem was at a time when the characters of the amphibian had been incompletely thrown off, and at a time also when the mammals diverged on their own path from a point near to that whence the birds took their origin. The general belief is in the origin of birds from some reptile stem, but there is not an absolute agreement as to precisely which group of reptiles birds are most nearly akin to." As to the tempting comparison between pterodactyles and birds, he says (p. 158): "The main difficulty . . . . . is in the fact that both can fly, and that each has acquired the power of flight by a different method. Having acquired the power of flight it seems clear that certain of the points of resemblance between them may easily be due to that mode of life, and may have been independently arrived at."

The Story of the Farm and other Essays. By James Long. Rural World Publishing Company, 8vo, pp. xv. and 158. Price 1s.

This little volume, to the appearance of which we have before alluded, consists of a series of papers by an agriculturist of wide practical experience which have mostly appeared separately in magazines but yet form a connected whole, a progressive argument treated from a social rather than a purely political standpoint. The ownership and tenancy of land, glass cultivation, poultry production and female and unemployed labour are discussed, whilst the argument culminates in an affirmative answer to the question, "Can the British Empire feed its people?" Lady Warwick contributes a paper on her scheme for an agricultural training hostel, and cottage homes for women. The book is one which Members of Parliament will find a useful quarry.

The Farmer and the Birds. By Edith Carrington, with preface by Canon Tristram, F.R.S. George Bell & Sons (for the Humanitarian League), 8vo, pp. xiv. and 204.

Miss Carrington has made in this little volume a solid addition to her many services to the cause of humanity. She has collected together from many naturalists, and has stated with admirable conciseness, particulars as to the food of most of our commoner birds. Speaking of them all as "workers" for the farmer, she finds a good deal to say even on behalf of such "slandered workers" as the owls, hawks, magpie, jay, wood-pigeon and house-sparrow, and includes in an appendix a useful summary of the various Wild Birds' Protection Acts.

Humane Science Lectures. By various authors. George Bell & Sons (for the Humanitarian League), 8vo, pp. viii. and 186. Price 1s. Cheaper re-issue.

These lectures may have been more interesting to hear than they are to read. The first, on the need of a rational and humane science, contains some less arid illustrative passages; but what are we to make of the following:—"Let us take the science of physiology. At present this is mainly carried on by means of dissection or vivisection. But both methods are unsatisfactory. . . . There is, I believe, another method—a method which has been known in the East for centuries, though little regarded in the West—which may perhaps be called the method of health. It consists in rendering the body by proper habits of life, pure and healthy, till it becomes, as it were, transparent to the inner eye, and

then projecting the consciousness *inward* so as to become almost as sensible of the structure and function of the various internal organs, as it usually is of the outer surface of the body. Of course this is a process which cannot be effectuated at once. . . . There is no doubt that many of the Yogis of India attain to great skill in it." Truly there is need of rational science in some quarters.

The Wanton Mutilation of Animals. By George Fleming, C.B., LL.D., F.R.C.V.S. Printed by permission of the Editor of the *Nineteenth Century*, for the Royal Society for the Prevention of Cruelty to Animals. George Bell & Sons, folio, pp. 24, with 7 whole page plates. Price 1s. 6d.

This sumptuous reprint of Dr. Fleming's article in the *Nineteenth Century* for March, 1895, is practically a supplement to Sir William Flower's celebrated paper on "Fashion in Deformity," showing, as it does, that fashion, however irrational, decrees barbarous cruelty in the docking of horses' tails, just as the other paper showed its vagaries with regard to human beings, The humanitarian, alas, must often be tempted to despair in the apparent fruitlessness of the struggle against the insensate hydra of fashion. We almost wish that the barbarism represented in Fig. 6 had not even been perpetuated by reproduction here.

The Animals' Friend, for November, is as beautifully illustrated as ever. The portrait of "Tommy" alone, is, in our opinion, well worth the price of the magazine.

Knowledge, for November, sustains the reputation of the magazine. Besides continuations of Mr. Stebbing's "Karkinokosm," Mr. Wilson's "Self-irrigation in plants," and Mr. Vaughan Jennings' "Botanical Studies," it contains an article showing that the "Connagh worm" of Irish superstition is merely the larva of the elephant hawk-moth, and another on the smell of earth as due to the bacterian *Cladothrix odorifera*.

Essex Naturalist, January—June, 1898, contains a summary of the report of the Essex Bird Society for 1897, and some returns from the Epping Forest Bird Protection League, an interesting article on fish-hooks of wood still in use on the Essex coast, another describing a hybrid between the oxlip and cowslip, and many valuable notes on local natural history.

The Victorian Naturalist, for September, contains a valuable paper on Pre-Linnæan Botanists.

Received.—*Annaes de Sciencias Naturaes* for January, April and July; *The Victorian Naturalist*, and *The American Monthly Microscopical Journal* for October; and *The Irish Naturalist*, *The Naturalist*, *Science Gossip*, *Humanity*, and *The Animal World* for November.

NATURAL HISTORY NOTES AND QUERIES.

A Dog Hero.—This is an extract from a letter received by a relative about ten days ago, which so interested me that I begged to be allowed to send it to NATURE NOTES. The incident took place at Swansea. Brian is a wire-haired terrier, Rollo, a St. Bernard. "Now I must tell you about Brian and Rollo. We took the dogs down for a swim one rough day, and to avoid the breakers I sent them in off the point into deep water. At this spot (unknown to me) there is a very strong current, which caught poor Rollo and dragged him down. Just as he sank, Brian, who was on the rocks some way off, sprang into the water and swam as fast as he could to him. Rollo rose to the surface, but sank again before Brian got to him, so when Brian got to the spot he went round and round looking for him, and presently we saw poor Rollo's two front paws appear and wave wildly in the air. Brian made a dash, dived down and caught Rollo by his cheek, pulled his head up and never let go till he had swum to the rocks with him, and safely landed him." M. S. Y.

The Robin's Politeness.—The following, for the truth of which a correspondent vouches, may, he thinks, interest the many bird-lovers who read

NATURE NOTES. At a house at Shanklin, Isle of Wight, at which he was recently staying, the correspondent was shown the window by which a robin entered daily into the larder. At his first coming the bird was summarily ejected by the maids, but the little intruder was not to be denied, and soon found a friend in the lady of the house, who gave orders that he should be allowed *carte blanche* of the domestic stores. The bird's visits were continued until one day the robin introduced his lady love to the household, bringing her close to the bounteous hostess, and chirping cheerily the while. Henceforth the pair paid daily visits, until the claims of the nest unavoidably prevented the little lady from attending her spouse. Eventually, however, the couple again made their appearance together, but they now proudly brought with them a promising family of five tiny birds, and, after a courteous farewell to their kind patroness, they departed for the season.

A Cuckoo Myth.—In a recent issue of your paper some one stated that the young cuckoo ejects his foster-brothers. This is not true. So far back as 1863, Charles Waterton said that "no bird in creation could perform such an astonishing feat." This story is everywhere associated with the name of Jenner, but his apologist, Dr. Norman Moore, in the "Dictionary of National Biography," admits that the account published in the works of the vaccinator is clearly not the result of his own observation. There ought to be no life left in the old falsehood now that Dr. Creighton, in his "Jenner and Vaccination," states the facts once more. What Jenner says he saw, he shows to be incredible. The anatomical structure attributed to the young cuckoo "has no existence." Waterton, among others, has demonstrated its utter absurdity.

Wolsingham, R.S.O., Durham. JOSEPH COLLINSON.

Tadpoles in November.—A few days ago I had some tadpoles brought me. They have well developed hind legs, so are not very young. They were taken from a pond in the neighbourhood. It seems to me a very unusual occurrence for frogs to breed at this season, and it would be interesting to know if others have noticed any in other parts of the country.

The Elms, Erith, Kent. ERNEST WALKER.

[Is it not a fact that tadpoles from spawn produced at the usual season are sometimes arrested in their development, somewhat as in the Mexican Axolotl, and remain stationary for a more or less prolonged period?—ED. *N.N.*]

Bees.—I have been much interested this year by noticing the enormous strength of the proboscis of the bee. This spring a swarm of bees got into the east side of our house, and, in spite of repeated attempts to dislodge them, established themselves for the summer, made honey and even swarmed. They came out through a crack in an old window frame, and one day when I was watching them I was much puzzled at a clicking sound proceeding from the window frame, and on examining I found that the bees were *eating* the wood away in order to enlarge the exit, I supposed for the sake of fresh air; but when drones appeared I understood that the *enlarged* entrance was for their benefit. After this I was not surprised to see humble bees, large and small, boring through the calyx as well as the corolla of salvias to get at the honey, showing their inferior intelligence to the honey bees, who always go the shortest and easiest way to the treasure. M. S. YOUNG.

Solitary Ground Wasps.—This past summer I have been much interested in watching the operations of a species of wasp working out tunnels of earth some two inches deep in a bank, and depositing grubs to the number of seven or eight in the separate cells for the larvæ to feed on. The wasps are about ¾ in. long with black and yellow bands across the back. Can you kindly give any information, name, &c.? J. HIAM.

[The wasp about which you request information is probably either *Odynerus parietum*, or *O. spinipes;* but it is difficult to say positively, as there are several species which burrow into earth and store maggots for the use of their larvæ, and most of them are black with yellow bands. You will find an account of

them in most books on the Aculeate Hymenoptera. They are useful inoffensive insects, and show great diligence in collecting their prey. I have watched *O. parietinus* extract maggots from rolled nettle leaves, paralyse the unfortunate victim with a sting and fly off with it, though often it is longer than the wasp herself. *O. parietinus* is extremely common, and may be seen throughout the summer either at work or sunning herself on palings or walls. Very often she burrows into rotting wood instead of earth, and forms her cells there.—E. F. C.]

Wasps, &c.—I see on page 218 that Mr. Daubeny misrepresents me to readers, and must ask for a little space to correct his statements. Will he kindly quote where and when I have said that wasps were "an unmitigated nuisance"? I think I have every number from the first "Letters" of the Selborne Society, but I do not see how I could hold such an idea, as I know from fifty years' observation of wasp life that they do good as well as harm. Then, again, Mr. Daubeny informs us that I often "kill the bullfinches," and he admires me for it. Now, I am under the impression that I recommended *catching* them for pets *instead* of *killing* them. I saw a beautiful lot at a show of cage birds at Stratford-on-Avon a few days since, and felt glad that I had recommended such a course, and I know of one in this parish, owned by one of the leading ladies, that I caught in my garden some seven years ago, It has become so tame and contented that it has full liberty to fly about the rooms and go out into the garden at leisure: that is different from being shot—their usual fate—as vermin. About forty have placed themselves in trap cages in my garden this autumn so far—five beautiful male birds in succession to-day in about an hour. Their havoc on fruit buds is terrible in some localities I have visited. One head gardener told me they took all the apple bloom-buds from the gardens last winter, and I saw the plum-buds in a farmer's orchard a complete wreck from bullfinches and sparrows.

Astwood Bank, Redditch. J. HIAM.

A Spider Story from the Soudan.—Major Lawrie, who was married yesterday amidst a sympathetic concourse of his brother officers in the Soudan campaign, is the hero of an interesting superstition. Before Atbara he discovered in the ventilator of his helmet an energetic spider, which came out in the evening, and having had his supper of flies, returned to his hiding-place. Perhaps remembering the story of Bruce and the spider, the Major left his new friend unmolested, and went into the Atbara fight with him. Men were killed all round, but Major Lawrie escaped without a scratch. At Omdurman he commanded a battery, and again was unwounded. Meanwhile, the spider slumbered in the helmet, waiting for this ridiculous human commotion to cease that he might come out and kill flies for supper. When the hurly-burly was over, Major Lawrie packed various articles to be sent home, and amongst them the helmet and the spider. Too late he remembered that he had sent his little friend on a long voyage without any larder. In great tribulation he hastened to London, opened the helmet-box, expecting to find the spider a corpse, and was rejoiced to see him alive, and even vigorous. Stranger still, on the way to England he (we beg pardon—she) had produced two young spiders! So profound is the impression made by this story in the Major's family circle that the most conspicuous gift of the bride's mother to the bride is a diamond spider, who will probably take care of Mrs. Lawrie in her husband's absence, and become a priceless heirloom.—*Daily Chronicle*, November 9.

The Vale of Nightshade.—Dugdale (Monasticon, 1655), quoting from the metrical preface to the Coucher Book of Furness (completed 1412), says that the valley in which Furness Abbey is built was called Bekansghill on account of the prevalence of the "Herba Bekan." The Abbey was founded in 1127, and what the plant may have been is now unknown. West, the historian of Furness (1774), wrote as if it were a fact that Bekan was *Atropa Belladonna* (or, as the name stood in those days, *Solanum lethale*) and designated the place the "Vale of Nightshade." On this foundation West's followers built the legend and changed the name to the more fanciful "Vale of Deadly Nightshade"—a title which it still bears in local guide books and better publications. That

Folkard, in his "Plant Lore," fell into the trap was to be expected, for he called his book a compilation, and it is perhaps not surprising that a writer in "Proceedings of the Historical Society of Lancashire and Cheshire," vol. vii. (1855-6), should also follow West's followers. *Atropa* grows at the Abbey now, and from Thomas Lawson's notebook (*cir.* 1680), we know that it was there then. The Abbey was visited by the Commissioners of Henry VIII., and the monks as a body expelled in 1535, so that if the plant be, as I surmise, a relic of the monastic physic garden, it had plenty of time to establish itself. As the species is a native of the limestone, not the sandstone, and limestone occurs not far from Furness Abbey, a difficulty arose in some minds, fostered too by a misprint in one of the editions of Withering's "Botany," where in place of "about the ruins of Furness Abbey" we read "about the mines of Furness Abbey." As plainly as possible then (1) *Atropa* is a native of the limestone, and at Furness Abbey it either grows on the ruins or at the foot of the walls amongst the *débris*—in both places, of course, there are remains of the old mortar and disintegrated stone. The building itself is of red sandstone. In the real limestone area of North Lancashire, in Cartmel (not Furness, Furness is one division only of the area), the species still survives as a wild plant; (2) There are also two other species whose English names are "nightshade," *Solanum Dulcamara*, the woody nightshade, (3) and *Circæa lutetiana*, enchanters' nightshade. *S. Dulcamara* is a native, and generally distributed on the outskirts of the Lakeland area, and is common at the abbey. *C. lutetiana* is a native and common in shady places throughout the district. Therefore, let us by all means keep to the old name, "Vale of Nightshade," for that is true. If any visitor who is not acquainted with the plants, asks the guide, he will show them the three species. What, then, is the Herba Bekan? According to the Coucher Book's verses it was " . . . . dulcis nunc, tunc sed acerba"—sweet and bitter, the "Amara dulcis" of Turner's Herbal, 1568, our Bittersweet, which is *Solanum Dulcamara*; so, at any rate, it was agreed in "Notes and Queries," 1894, and with this I quite concur.—S. L. PETTY in the *Yorkshire Post.*

SELBORNE SOCIETY NOTICES.

Donation towards Reduction of the Deficit.—The Council acknowledge with thanks the receipt of the following donation: G. F. Rowe, Esq., 17s. 6d., per Mrs. Flinders Petrie.

Additions to the Selborne Library.—The Librarian reports that the following books have been received from the Editor, and are hereby acknowledged with thanks: "Lectures for Children—The Spider, The Ant, Our Feathered Allies: Useful Birds, Frogs and Toads," by Florence Horatia Suckling. The Essex Naturalist, April, 1897, to March, 1898.

Council and Committee Meetings.—The next meetings of the Council will be held on Tuesdays, December 6 and January 3, at 5.30; and of the Magazine and Leaflet Committee on Tuesdays, December 20 and January 17, at 5.30.

Selborne Society Badges:—The attention of members is called to the recognised badge of the Society, which was designed by Mr. John Fullwood, and

can be had of the Secretary, as follows. Prices: Brooch, 3s.: solitaire, 1s. 9d.; pin, 1s. 6d.: pendant, 1s. 6d. They are tastefully designed in pale blue and

silver, the outlines being as shown in the accompanying illustration. Councillor's badges have a crimson centre. They are especially useful as a means of identification between Selbornians at branch meetings, or at country Field Club Rambles.

NEWS FROM THE BRANCHES.

Bath Branch.—The annual conversazione of the Bath Branch on November 17 was most successful in attendance and interest. The Ladies' Microscopical Society showed slides, and there was some good amateur music and recitations. The President and the Secretary gave short addresses on the prospects and work of the Society.

Clapton.—The Committee of this Branch announce that they have arranged for the holding of the winter social meetings as in former years, but the place of meeting this session will be Room No. 5, North-East London Institute, Dalston Lane, adjoining the Hackney Downs Station, G.E.R. The meetings are open to all members of the Branch and friends, but as there is no fixed charge for tickets as formerly, those attending are requested to remit a small donation to the Hon. Sec. towards the cost of refreshments. The session opened with a microscopical evening on Saturday, November 19.

Croydon and Norwood.—An address was given by Mr. E. A. Martin, on October 25, to the Boys' Brigade, at Thornton Heath on the subject, "Our Summer Rambling and its Lessons."

Farnham.—At a general meeting of the Branch on November 16, the following resolution was unanimously passed:—"That this meeting regrets that the Branch contribution of 10 per cent. has not been increased. That it is necessary that the deficit on the central fund should be cleared off, and the financial position of the Society improved. That in addition to the contribution of 20 per cent. which this Branch has hitherto sent, it will this year forward any balance available after the local expenses have been paid."

ANSWERS TO CORRESPONDENTS.

Stanley Blenkadn.—The bat you saw was probably the pipistrelle, which will come out on a warm evening at any season. As to becoming a member of the Society, please apply to the Secretary, as below.

Etamubeta.—It is impossible in the absence of any specimen to say what the animal might have been.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 34, Argyll Mansions, Addison Bridge, London, W.; letters connected with the business of the Society, enquiries as to the supply of the Magazine, subscriptions, &c., to the Secretary, A. J. WESTERN, Esq., 20, Hanover Square, W.

97. VOL. IX. JANUARY, 1898.

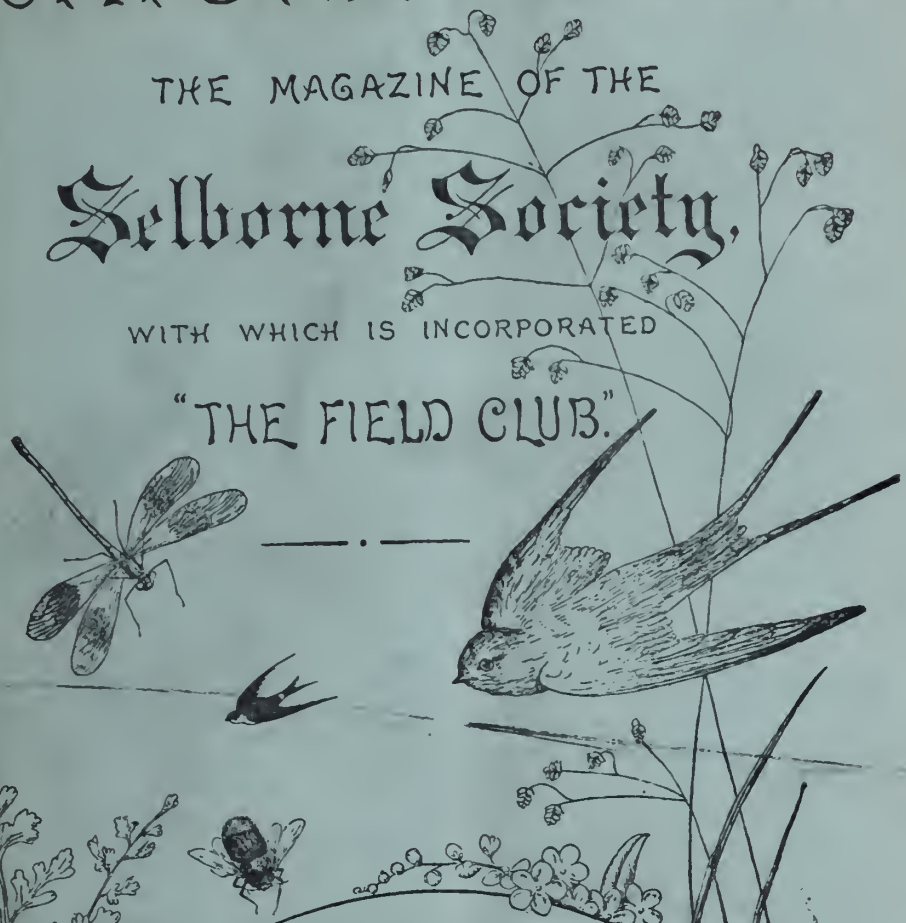
NATURE NOTES.

THE MAGAZINE OF THE

Selborne Society,

WITH WHICH IS INCORPORATED

"THE FIELD CLUB."



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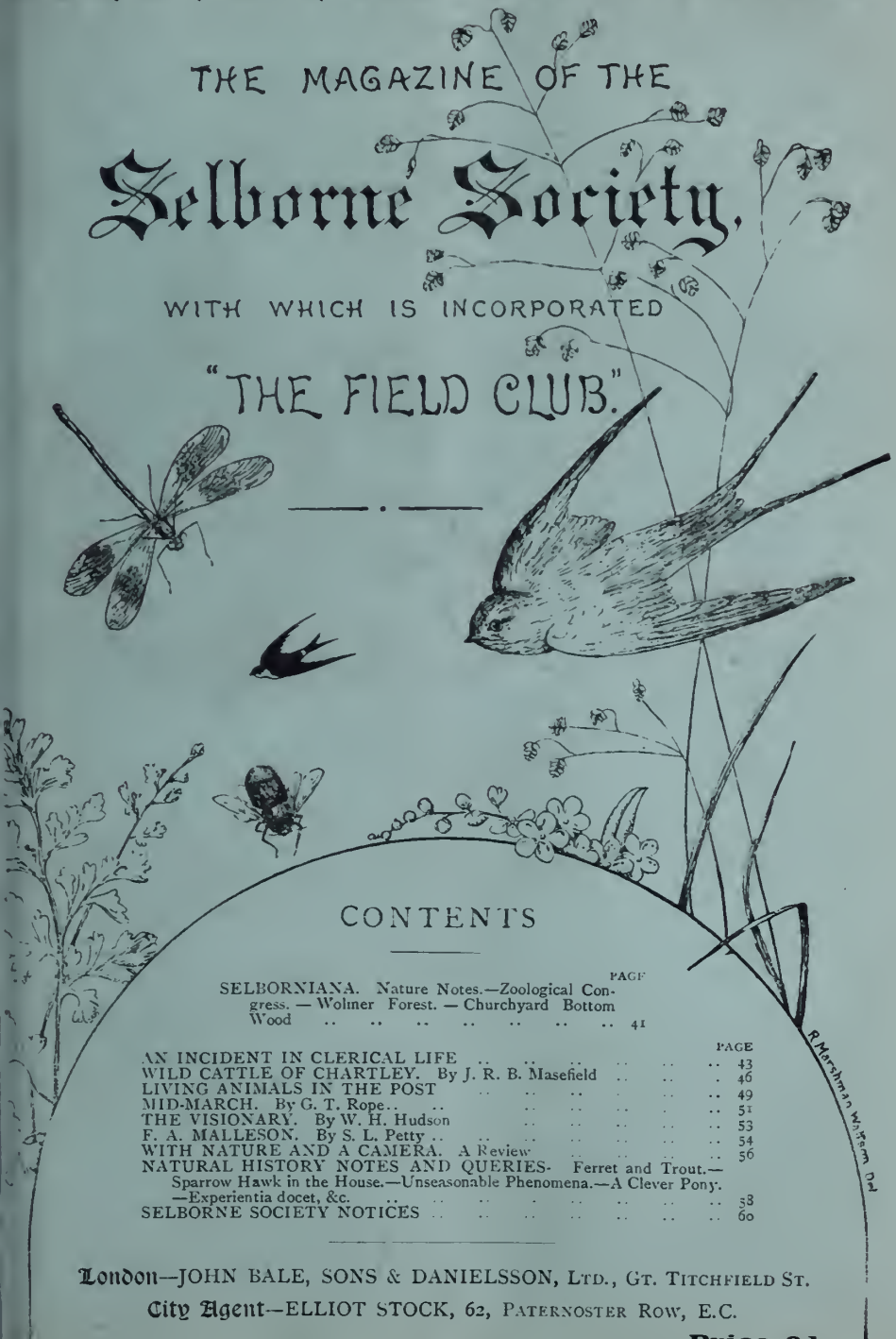

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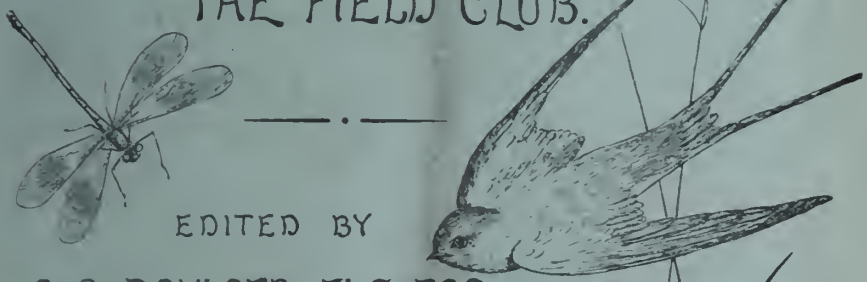

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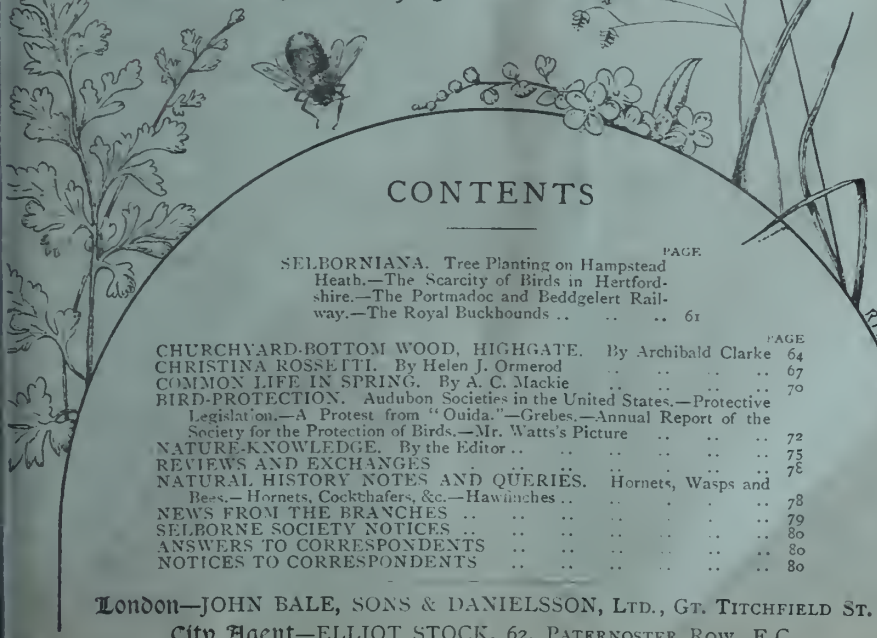

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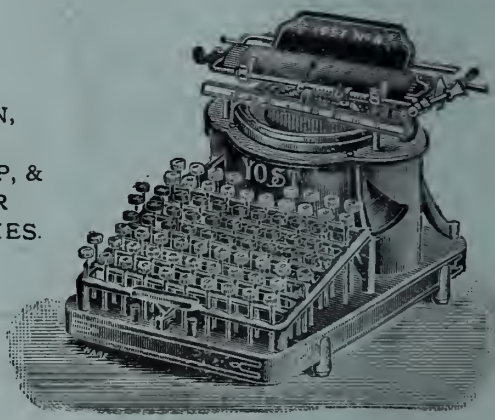

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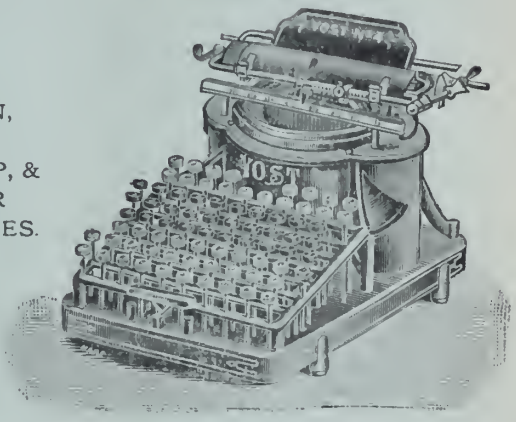

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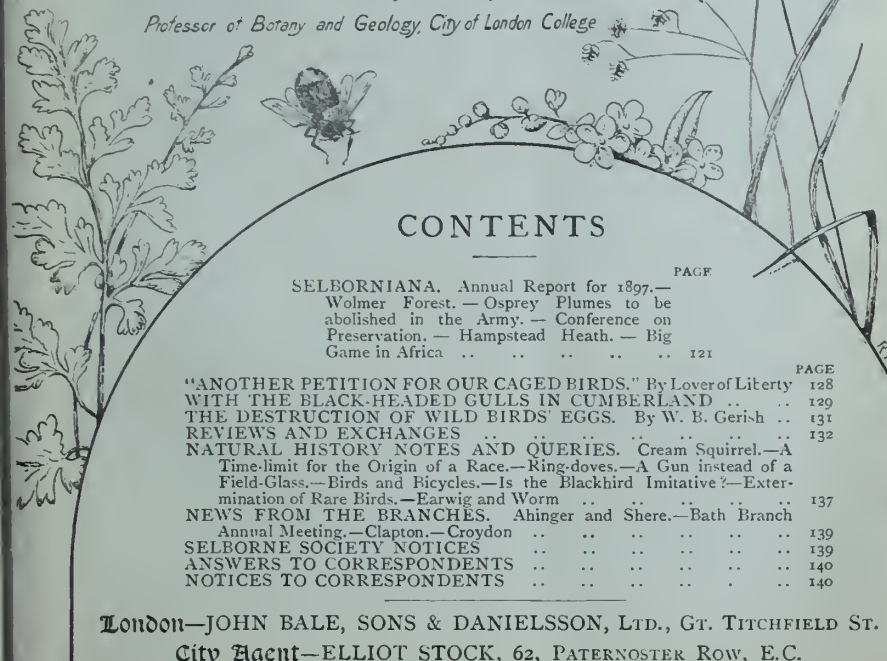

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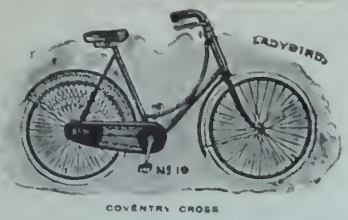

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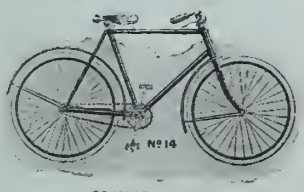

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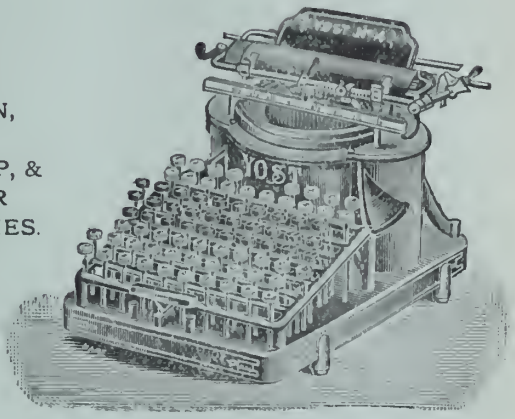

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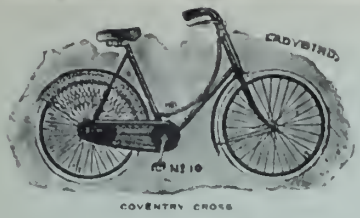

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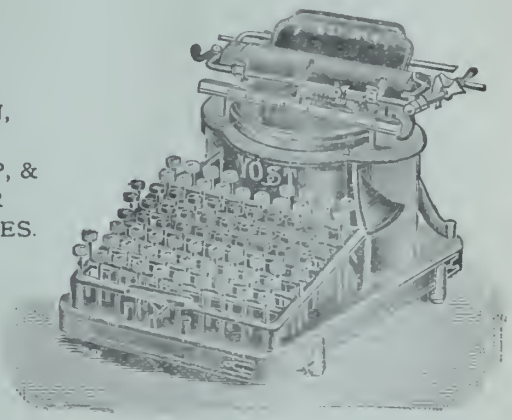

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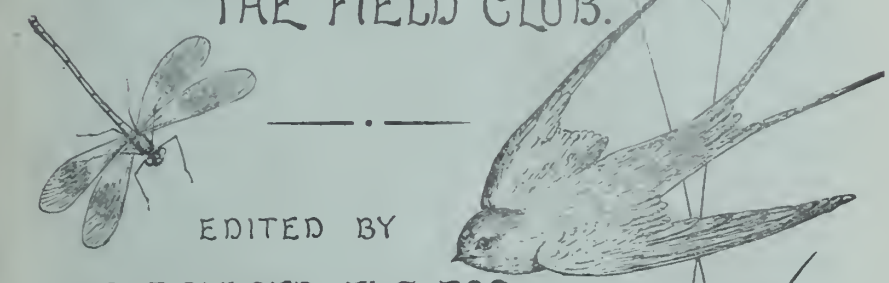

EDITED BY

G. S. BOULGER, F.L.S., F.G.S.,

Professor of Botany and Geology, City of London College

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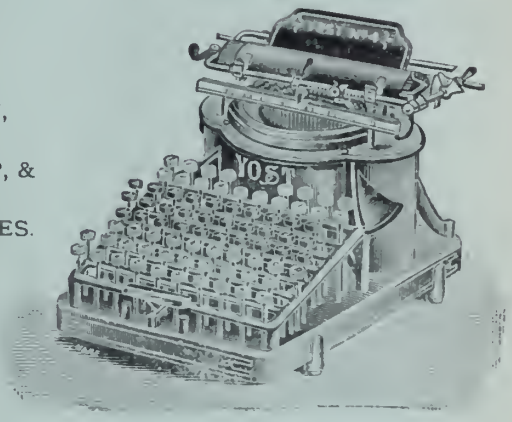

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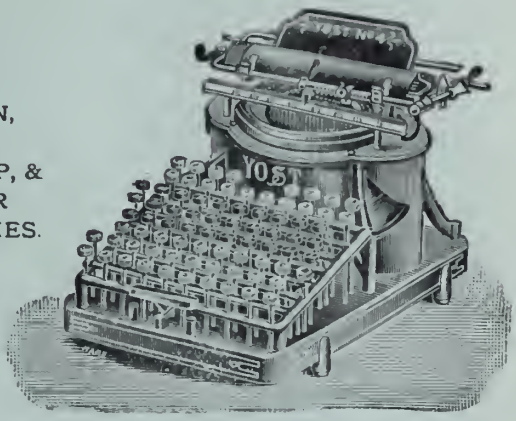

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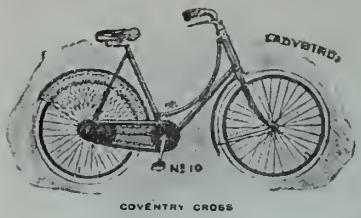

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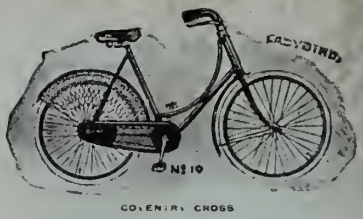

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